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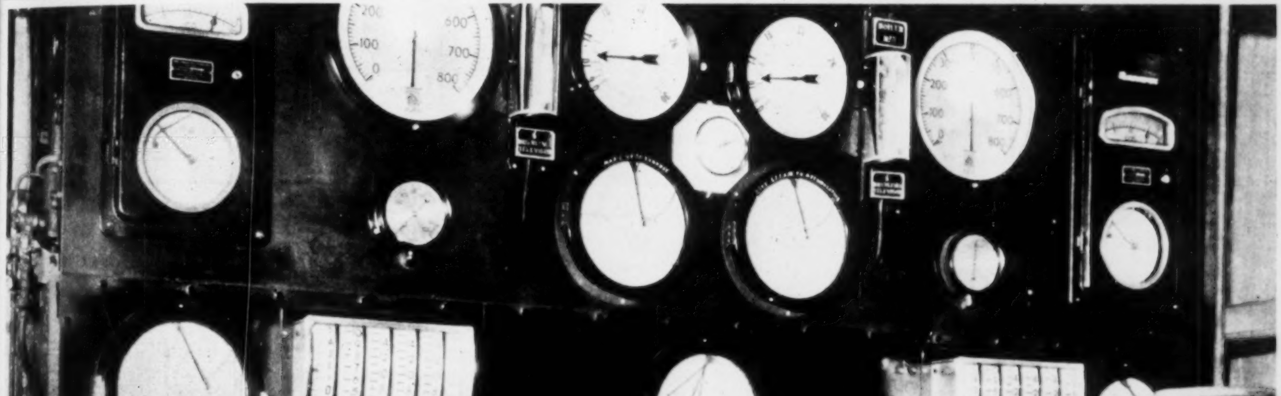
INSTRUMENTS

THE MAGAZINE OF MEASUREMENT AND CONTROL

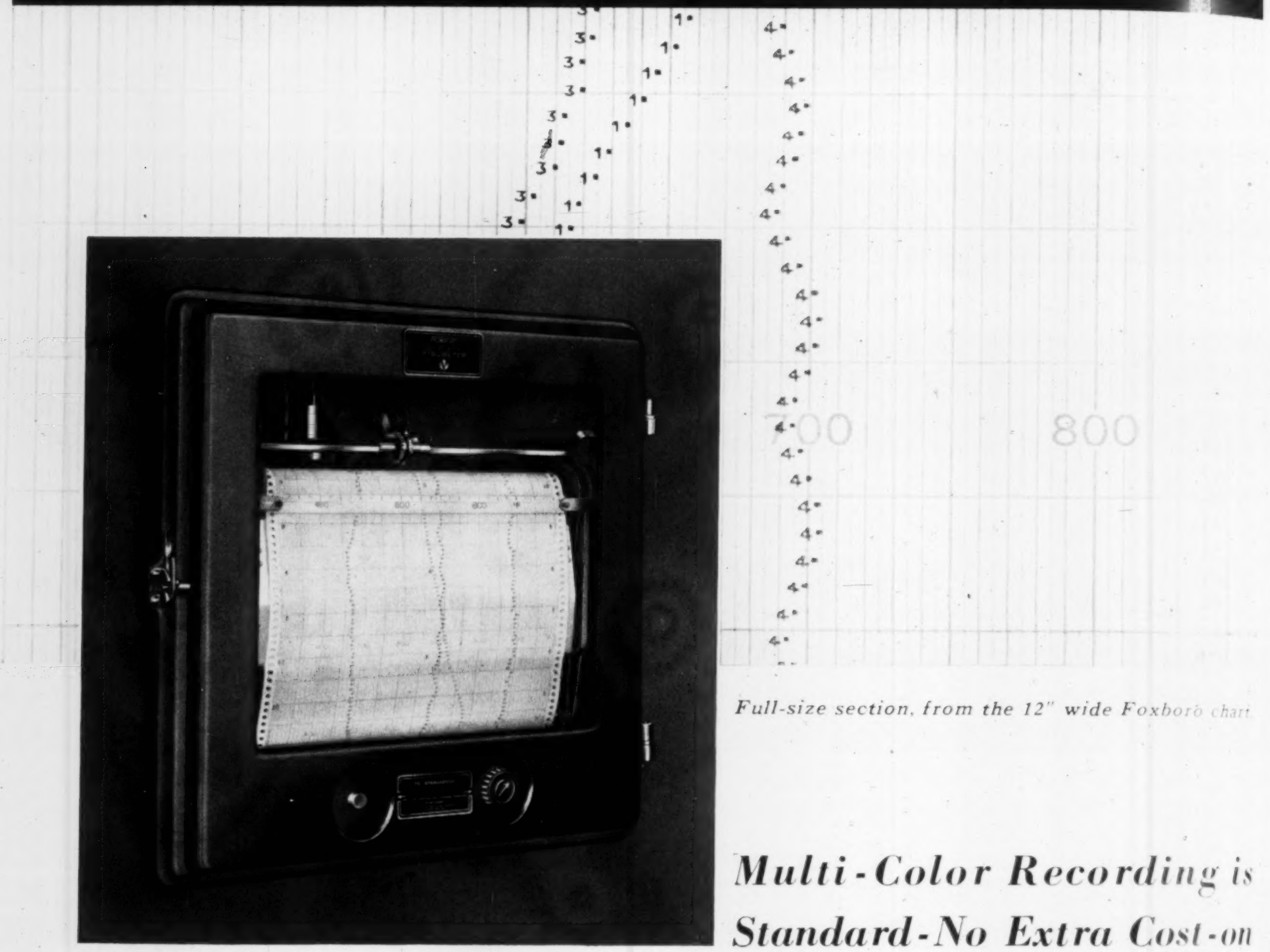
Volume 8 JUNE 1935 Number 6



TWO-BOILER CONTROL PANEL, PENNSYLVANIA SUGAR CO., PHILADELPHIA
(Courtesy The Brown Instrument Co.)

**IN TWO PARTS — SUPPLEMENT IS
THE 1935 INSTRUMENTS INDEX**

Records in COLOR and NUMBER



Full-size section, from the 12" wide Foxboro chart

Multi-Color Recording is Standard-No Extra Cost-on

FOXBORO POTENTIOMETER RECORDERS

FOR 2, 3, 4 or 6 TEMPERATURES

The first multiple-color recording for potentiometers was introduced to industry by the Foxboro Potentiometer three years ago. Then, over a year ago, Foxboro originated numerals in the different colors and established it as standard on all Foxboro Potentiometer Recorders for 2, 3, 4 or 6 temperatures. Today operators are enthusiastic over the greater ease of chart reading made possible by this method of recording. Instruments recording only in color are also available and have certain advantages for some applications.

Yet, this is only one of the many advanced features you'll find in Foxboro Potentiometers. Temperatures are recorded rapidly, yet the balancing mechanism operates at moderate speed, avoiding excessive wear. The slide wire contact of the potentiometer system is mounted integrally with the recording mechanism, eliminating the lost motion of gears and links, assuring absolute agreement between the record and the measurement. The instruments as a whole are truly simple; throughout the eight years they have been built, improvements in design have been directed towards eliminating trouble-giving parts, rather than adding them.

Look into this Foxboro Potentiometer before you purchase your new pyrometers—send for Bulletin 190.

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REG. U. S. PAT. OFF.
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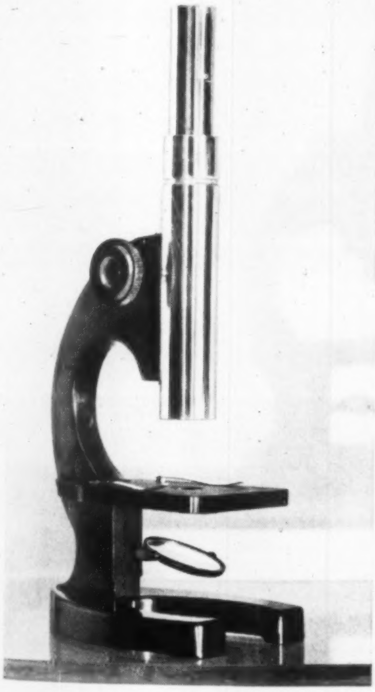
• COMPLETE INDUSTRIAL INSTRUMENTATIO •

Accurate Molding replaces Machining in this fine instrument—

IN MANUFACTURING microscopes the common practice has been to make the frame and stage of metal, using enamel, or other surface coating, to provide the required black finish. Now Bausch & Lomb are producing a microscope with frame, stage, and knurled adjusting screw knob formed of Bakelite Molded.

The frame and stage of this microscope is formed in four separate parts, each one so precise in dimensions that quick, easy assembly is possible and no tooling nor fitting is required. Even the grooves which guide the vertical ratchet slide are formed in the mold to the close dimensions demanded. The necessary holes for screws and fastenings are also formed in the mold.



No enamel or other finish coat is needed as the material itself is black, and a smooth lustrous surface is acquired in the mold. Long service and frequent handling cannot mar either color or finish.

This microscope is but one example of the hundreds of devices which have been improved through the use of Bakelite Molded to replace parts formerly machined from metal or other materials. Some idea of the possibilities and economies which Bakelite Molded affords may be obtained by sending for booklet 37M, "Bakelite Molded". Your request will bring a copy at once.

Illustrations show microscope with frame, stage, and screw knob of Bakelite Molded and (above) the four molded parts used in frame and stage, Bausch and Lomb Optical Co., Rochester, N. Y.

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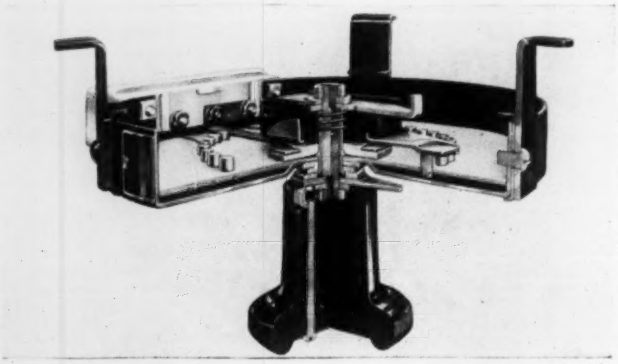

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RHEOSTATS

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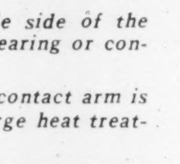

Ward Leonard Electric Co.
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Please send me your NEW Bulletin No. 60.

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AN INSTRUMENT WITH A THOUSAND USES....

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THE HAYS PORTABLE FLUE GAS ANALYZER

FEW instruments can equal the record of the Hays Portable Flue Gas Analyzer for all-around usefulness. Chemists use it in laboratories, doctors use it in hospitals, line crews use it in the oil fields; but, most important of all, is its money saving value in power plants.

Ability to meet the requirements for such diversified classes of work leaves no questions about its accuracy, durability, simplicity, or speed. It operates on the Orsat principle—volumetric absorption. Replacement of fragile glass with modern alloys at vital points gives it rugged strength while holding weight to the minimum. Anyone can use a Hays Analyzer, and with little practice, make CO_2 readings in less than 30 seconds, or a complete analysis for CO_2, O_2 and CO in 3 to 4 minutes.

The Hays Analyzer alone or combined with one of our 50 types of complete portable combustion Test Sets, is available in several different sizes with fittings specially designed for class of work contemplated. Combustion engineers are enthusiastic about the new Series 3000 Test Sets which include a built-in Pointer Type Draft Gage as illustrated above.

Write for descriptive literature on Hays Gas Analyzers, Portable Combustion Test Sets, Automatic Combustion Recorders for CO_2, Draft and Flue Gas Temperatures and Hays Pointer Type Draft Gages.

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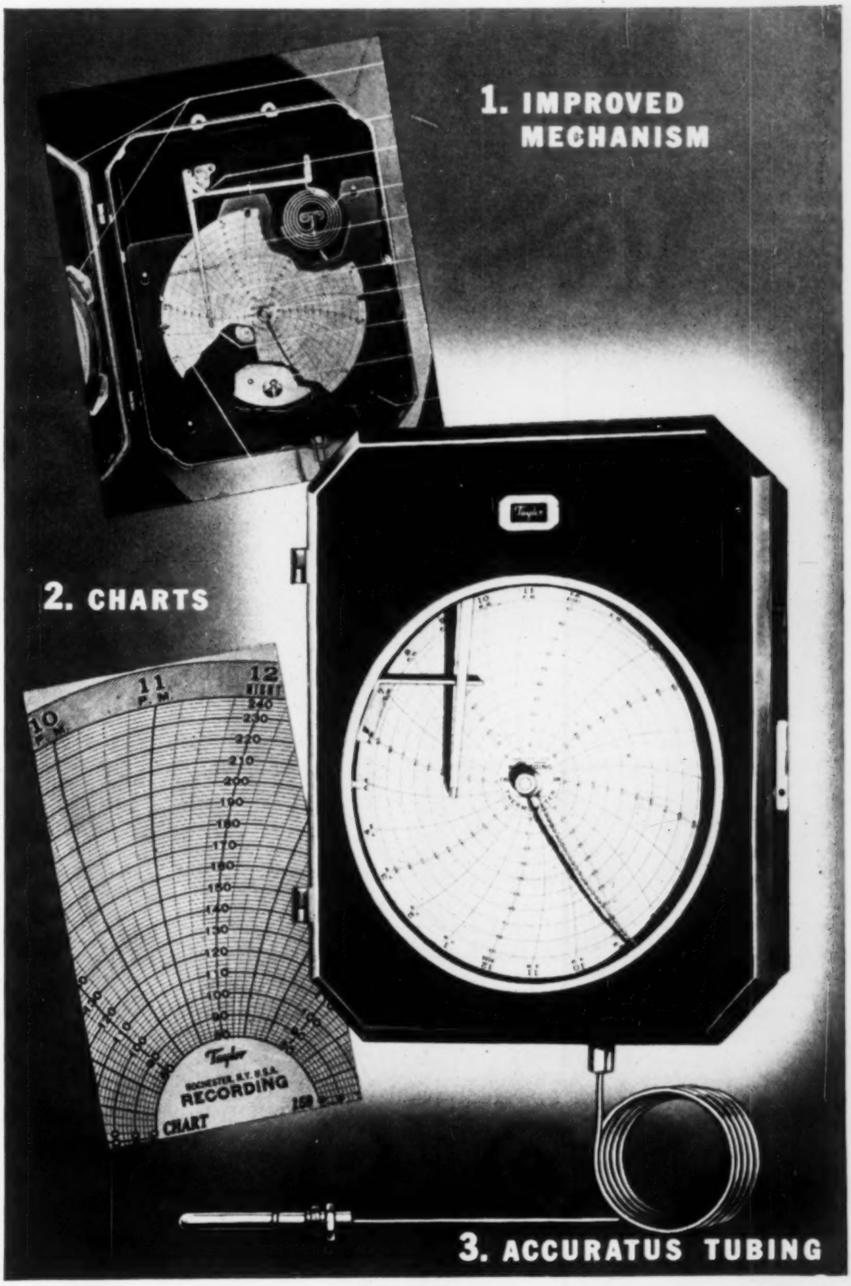

THIS modern mercury-actuated Taylor Recording Thermometer, with many refinements and improvements in design and construction, assures more precise and accurate recording of temperatures than was ever obtainable before. Its promise of exceptionally efficient and economical operation has been fulfilled in power plants, large and small . . . in the most complex installations and the simplest.

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Taylor

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TEMPERATURE, PRESSURE *and* FLOW INSTRUMENTS

INSTRUMENTS

THE MAGAZINE of MEASUREMENT and CONTROL

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THE 1935 INSTRUMENTS INDEX
(Insert)

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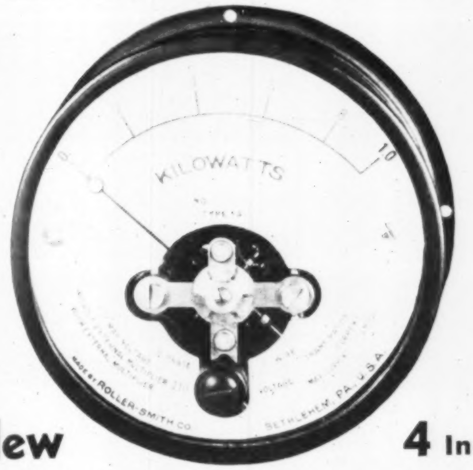

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The improved performance of the Type 813-A Oscillator is due to unique design features including: massive fork of new design, made of cold rolled steel; correct placing of the two microphone buttons to minimize effect on free vibration of the fork; use of a filter to attenuate the output harmonics.

For use as a tone source in bridge measurements and as an inexpensive general-purpose audio oscillator, the new Type 813-A Oscillator fills a definite need.

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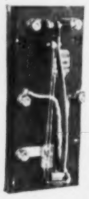

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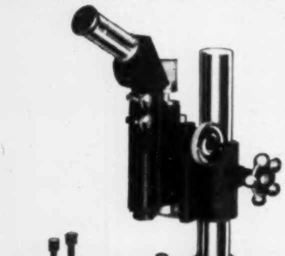

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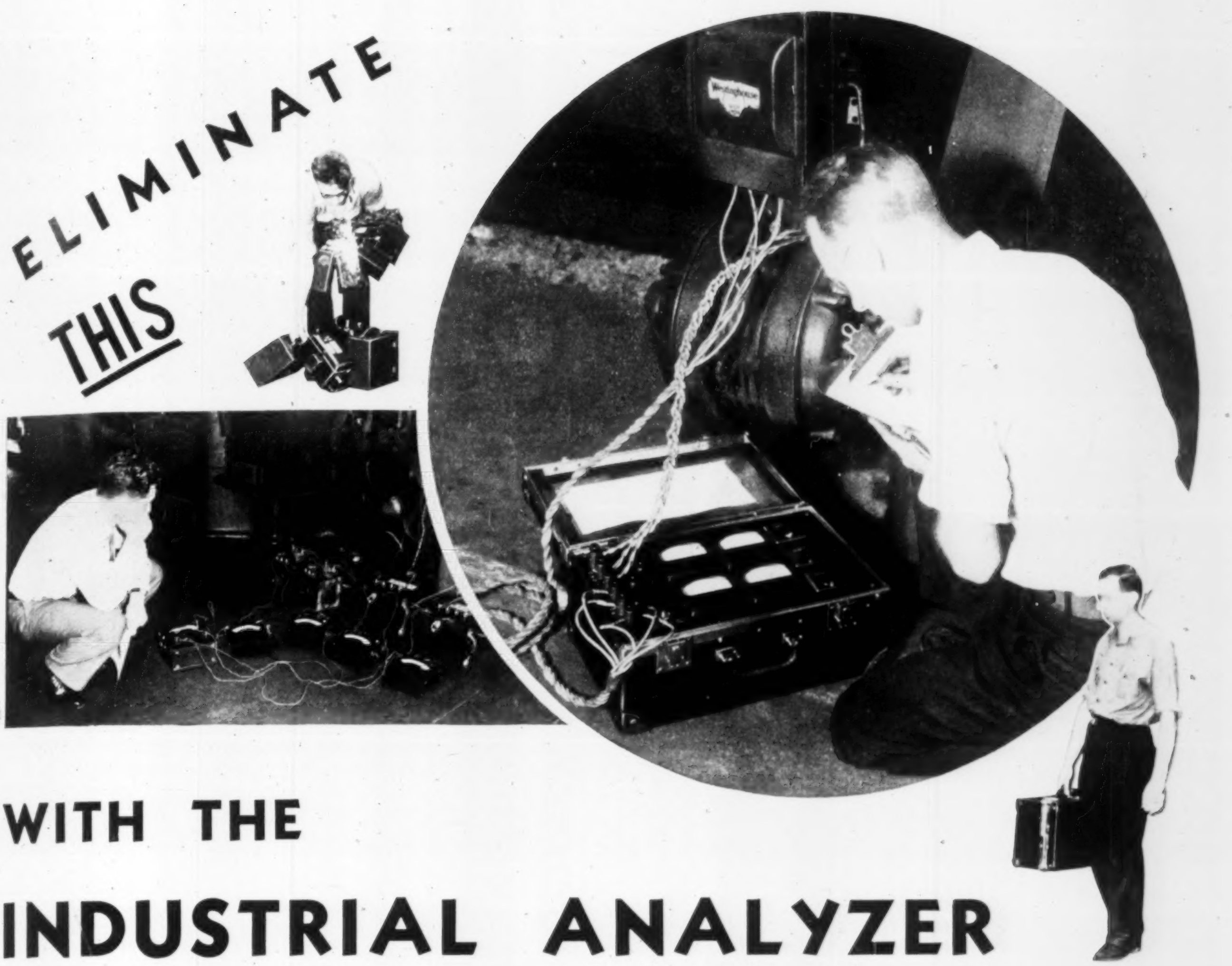

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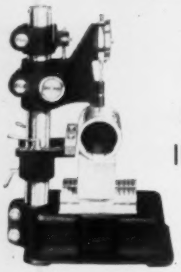

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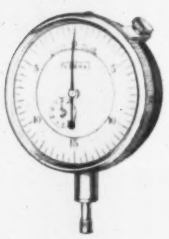

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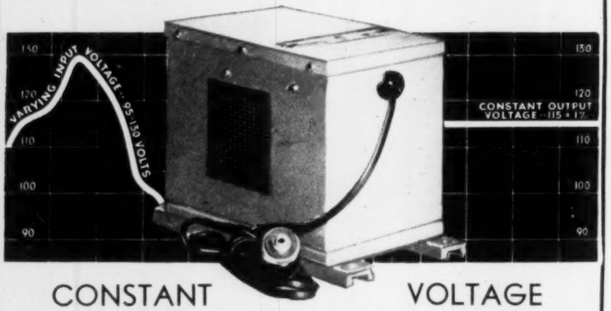
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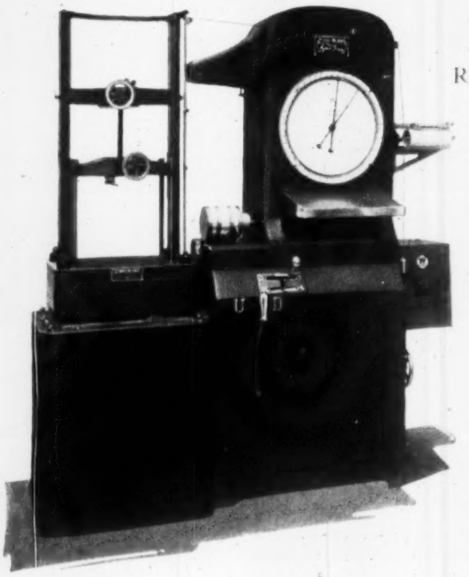

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EDITORIAL COMMENT

In This Issue

Some weeks ago, suspecting that the brakes on our antiquated chariot needed fixing, we sped on a deserted straight highway and jammed them hard. Result: in $<$ 1.5 sec. we came to a stop at 75° to the direction of the road. Next day we told a mechanic to fix—*not the linings*, but everything else, for we had just received and examined a manuscript by W. A. Blume, which you now will find as this month's leading article. (Pages 140-141)

Then comes the first of a series of articles on new specialized methods and instruments for the solution of problems involving motion, time, photography and combinations thereof. This first article is by Dr. Fassin, who at the time of writing is on his way to install the spectrographic equipment in the new stratosphere balloon, "Explorer II." (Page 142.) The second will be on Micro-cinematography, by its originator.

This month's instalment of our electrical measurements series deals entirely with demand meters—a subject in which Perry Borden has particularly distinguished himself for more than fifteen years. (Pages 143-152)

It may not have been meant as a Christmas present, but that's when a striking photograph entitled "Testing Turbine Blades" came from the Westinghouse Technical Press people with the suggestion that it would make a good cover illustration. "Why not send us an article on these tests?" was our counter-suggestion, and the outcome is R. P. Kroon's fascinating article. (Pages 154-155 and 159.)

Having used the word "fascinating" we'll have to forego qualifying C. H. Gibbons' treatment of materials testing machines which concludes this month. (Pages 156-159.)

For that matter, some devices described in the New Instruments section (pages 160-165) are "fascinating" as well as suited to meet your requirements; and so are some of the booklets listed under Manufacturers' New Literature (pages 163-4-5).

The Front Cover Photograph, taken at the Pennsylvania Sugar Co., Philadelphia, shows a two-boiler control board distinguished for the relatively large number (ten) of steam flow instruments: two flow indicators in middle of top edge—one for each boiler; six flow recorders; and two flow recorder-integrators. These last are in the center, just above the two 6-point recording potentiometer pyrometers—which likewise deserve mention. We congratulate the engineer—whose competence may be judged from the way he holds exactly 15% CO_2 (see flue-gas analyzers at upper corners) and exactly 400 lbs./in.^{2} (see large pressure gages next to them).

The Instruments Index Supplement is here at last, and we hope that you will find it useful every workday!

You, Too, Are "Copy"

MANY newspaper men maintain a mental card index of energetic, colorful personages whose activities never fail to interest some large portion of the reading public. Nearly every sports writer and dramatic critic, and certainly every political commentator, knows a dozen public characters to ring up or a dozen places to go to on dull days when nothing "breaks" over the telephone, when the "leg men" bring in little, and when the free ore of "handouts" yields only a couple of lines to the pound of mimeographed sheets. The young "leg men" themselves, instead of roaming erratically through avenues and alleys in the vague hope of turning up copy, make methodical rounds of police blotters, hotel registers and other likely sources of items.

In the fields of pure science and of industry, too, some "names make news."

To make history is more important than to make news. History is being made unobtrusively by a group of some four thousand technicians—*Instruments'* subscribers.

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But these Instrumentation "chores" which you so calmly take in your stride—and those performed by your fellow-subscribers—are making history. For Instrumentation is, we reiterate, the eugenic marriage of science and industry—in which both rejoice and of which a higher standard of living is the first offspring. The author of this month's leading article is an old *Instruments* subscriber who modestly saw no news in his work until urged to write about it.

To *Instruments* you, too, are "copy." *Instruments* lacks an elaborate reportorial staff, so we ask you to interview yourself and write up your recent achievements for the benefit of your fellow-subscribers. If you want hints on what to write about, look up page 21 of the February 1934 *Instruments* . . . and go ahead!

M. F. BEHAR

Instruments Contribute to Better Brake Performance

By W. A. BLUME*

IN research work on brake lining, brake drums, and brake assemblies it is particularly important that testing conditions be closely controlled and the results accurately observed. The American Brakeblok Corporation has made a number of interesting applications of instruments in its experimental laboratory. One of these is the use of recording instruments to give a picture of what takes place in a brake assembly every instant while a stop is being made. This picture of brake operation is given to the engineer through a study of the recorder charts.

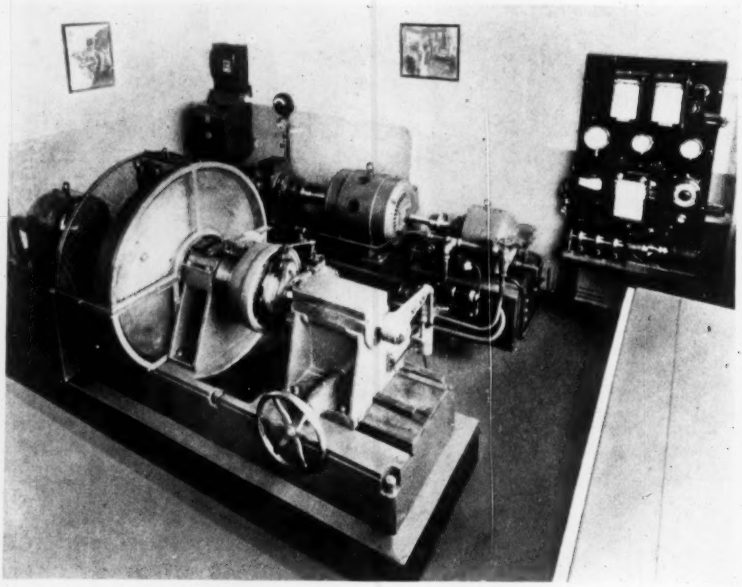

Fig. 1. In the foreground stands the dynamometer referred to. Oilgear driven, its operation is entirely automatic once it is set up.

In the experimental laboratory of the American Brakeblok Corporation large dynamometers (Fig. 1) are used for the testing of brakes and brake equipment. The brake assembly to be tested is mounted on the dynamometer and the machine is adjusted so that both the velocity with which the drum passes over the brake lining and the power loading per square inch of lining area are the same in the laboratory as on the vehicle on which the brake assembly is used.

The procedure for the standard life test on brake lining requires that stops be made at one-minute intervals and the readings on brake performance taken at the end of every ten stops. Typical charts are shown in Figs. 2 and 4.

The *deceleration* produced by a given brake application is determined from a study of a chart such as shown in Fig. 2. This is a chart from the speed recording instrument, giving the brake drum speed at every instant throughout the stop. During nine out of every ten stops, the recorder pen merely rises to indicate the maximum drum speed reached and returns to zero during the stop. The rate of chart travel ($3/4''$ per hour) is just sufficient to place one recording adjacent to the preceding one. These readings are represented by the broad band and merely show that the dynamometer was stopped from the same speed during each of the nine stops.

At every tenth brake application, however, the chart speed is $3/4''$ per second. The chart starts to move at this high speed one second before the brake is applied. It continues to travel at this speed for a few seconds after the brake has brought the revolving drum to a stop. Thus the instrument plots a graph showing speed in

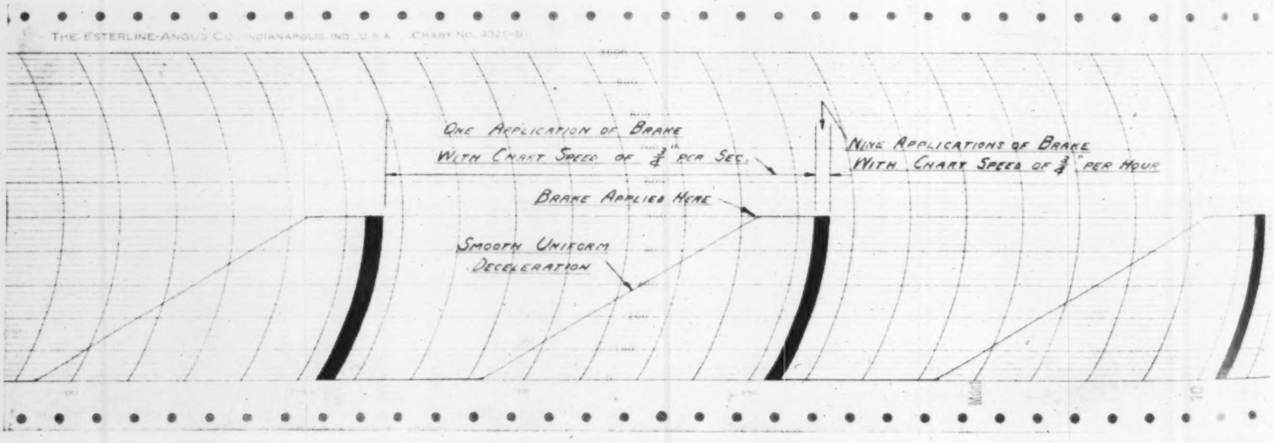

Fig. 2. A section of a chart record from which is determined the deceleration produced by brake application. Readings are taken once every ten stops with the chart traveling at its high speed—the other nine at low chart speed.

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*Vice President, American Brakeblok Corp., Detroit, Mich.

r.p.m. against time in seconds. The deceleration in r.p.m. per second produced by the brake application is determined by simply deducting the speed as shown at any given time from the speed shown one second before. A study of this chart reveals just how much of the stopping was done during the first second of braking and how much was done during each succeeding second. In some cases the deceleration is uniform, that is, the stopping action is equally divided among the seconds required to make the stop. In other cases, the major part of the deceleration takes place during the first few seconds or during the last few. All of this is interesting and useful information and easily obtained from a study of the charts.

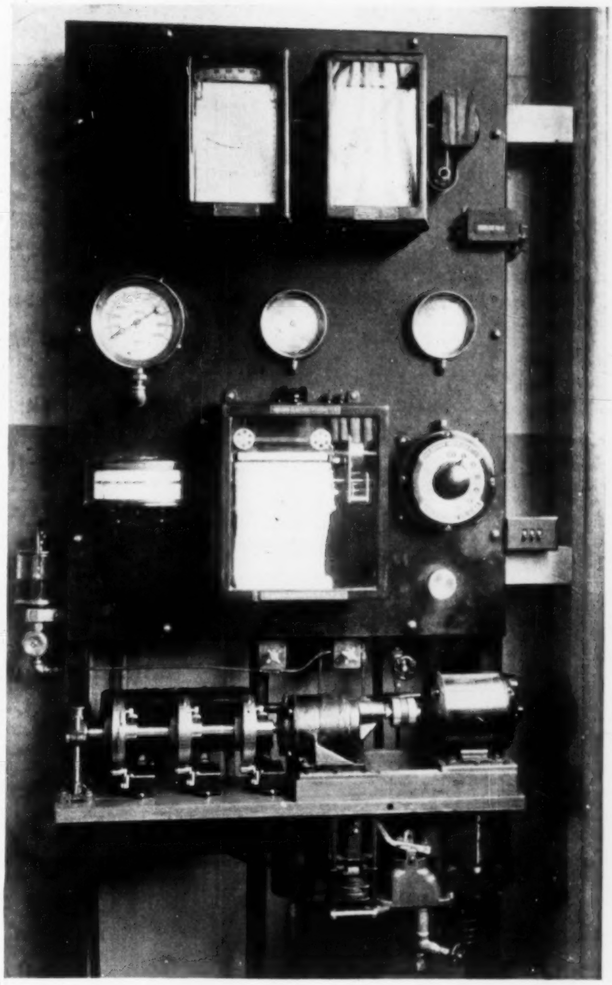


Fig. 3. Upper two recorders are for deceleration and torque; lower recorder is for temperature; dynamometer control gear at bottom.

The *torque output* of the brake assembly under test is recorded in the same manner and at the same time as the deceleration is recorded. The torque record corresponding to the deceleration record shown in Fig. 2 is reproduced in Fig. 4. A torque arm attached to the brake assembly is connected to a piston having an area of one square inch, and the torque recorder is connected hydraulically to this cylinder. Since the output piston is mounted on the torque arm at a distance of one foot from the brake assembly center line, and the piston area is one square inch, the resulting reading on the torque chart gives the output of the brake directly in pounds feet of torque during every instant of the stop. The values shown on the torque chart are directly related to the values given on the deceleration chart, since the two are run through the instruments simultaneously and at the same speed. A study of the torque chart is also useful for various brake vibration studies, since abrupt changes in the torque output may be directly linked with the deceleration and any brake noises which are produced.

Temperature. A third recording instrument used to get the picture of just what is taking place in a brake assembly during a stop is the recording pyrometer. Thermocouples are mounted at various places in the brake drum and brake shoes, the terminals of these being carried through collector rings to brushes attached to the recording pyrometer. The rate of temperature rise during each stop is plotted by this instrument, as well as cooling curves showing the rate of heat dissipation between stops.

Through a study of the records produced by these three instruments, the engineers of the American Brakeblok Corporation are able to get a clear and accurate picture of brake conditions and performance. The use of these instruments has added greatly to the supply of braking information, and hence to betterment of brake performance and safety of passengers and pedestrians.

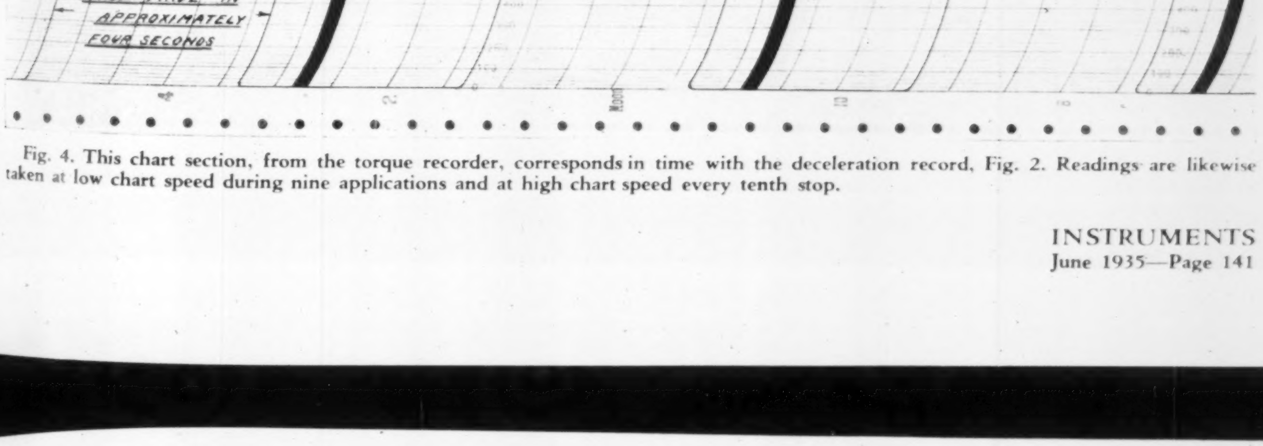


Fig. 4. This chart section, from the torque recorder, corresponds in time with the deceleration record, Fig. 2. Readings are likewise taken at low chart speed during nine applications and at high chart speed every tenth stop.

First Article in a New Series on Modern Motion Study Instruments—See Editorial Page

The Centrifuge Microscope

By GUSTAVE FASSIN*

SO unusual were the application requirements for the Harvey-Loomis[1] Centrifuge Microscope that they may be of interest to the readers of *Instruments.* A few of the problems encountered are therefore outlined briefly here.

The 9″ rotor (1), Fig. 1, of the centrifuge was so computed as to produce a minimum of wind resistance, air friction and whirls. To reduce the starting and stopping lag, the flywheel effect was also reduced to the minimum.

The lower curve of the rotor was undercut from the theoretical curve in order to produce a suction of air, dissipating the heat generated by the motor. The rotor had to be kept cool to avoid evaporation of the liquid specimen placed on top of the rotor at (3).

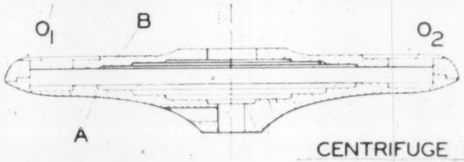
The rotor is composed of two disks of aluminum alloy with a tensile strength of 55,000 lbs./in.^{2}. Inside this rotor two microscope objectives, O_1 and O_2, are built, with a right angle reflecting prism in the center. This prism can be turned so as to take in light through O_1 or O_2 and reflect it in to the eyepiece (7). The magnifications obtained with a 10× eyepiece are 100× and 400×.

To reduce the wind resistance, the rotor is entirely enclosed and the inside walls of the guard (2) chromium plated and polished. The rotor is driven by a grinding motor (10) specially balanced and checked for a speed of 10,000 r.p.m.

This motor has a double row of ball bearings. A ball thrust is adjusted so as to take most of the vertical load.

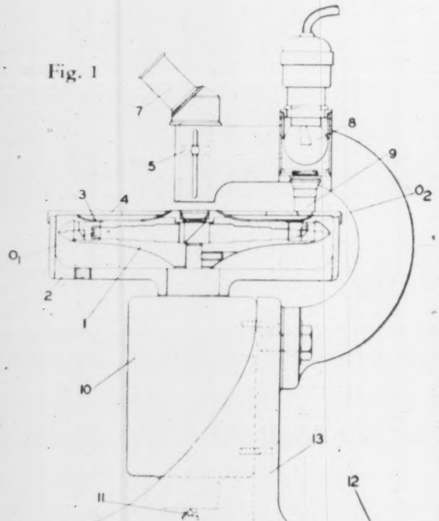
The windage produced by the rotor, at full speed, is so small that a match flame held within an eighth of an inch from the top surface does not quiver.

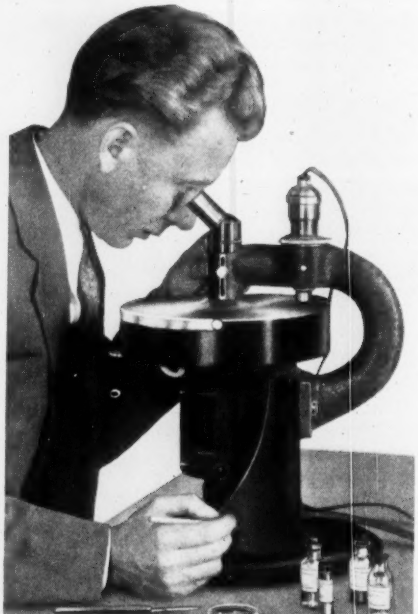
In the arm of the instrument is built a light source (8) which through the condenser (9) sends a slit of light into the objectives, O_1 or O_2. This slit covers approximately a quarter of a degree of the circumference of the rotor so that for a speed of 10,000 r.p.m. the light impulses reaching the eye are each of the order of 1/300,000 of one second, but repeated 10,000 times a minute these impulses give the impression of a continuous image when observed through the eyepiece (7).



CENTRIFUGE MICROSCOPE ROTOR

Fig. 1

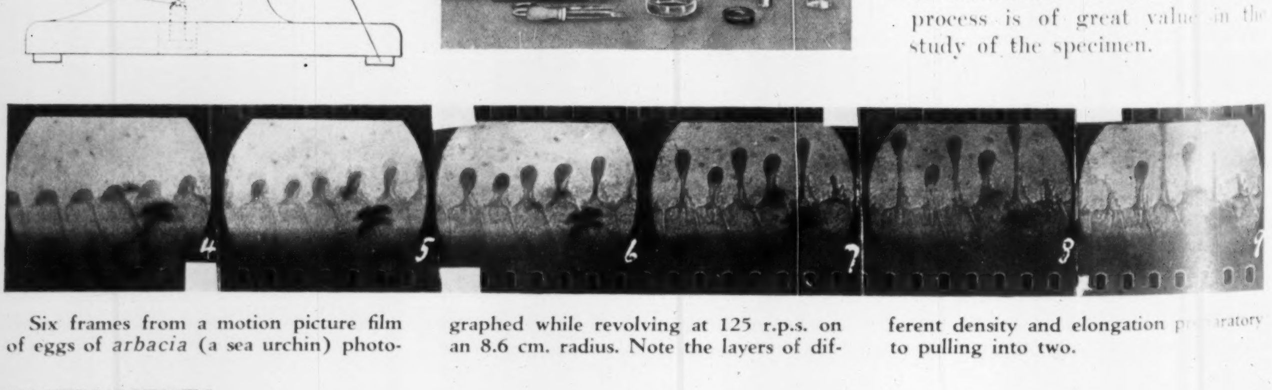




The specimens are put in a specially made glass slide which is kept in place (3) by means of a steel spring clip above the objectives, O_1 and O_2. On the opposite side of the glass slide an aluminum plate is placed of exactly the same weight as the specimen slide.

The force developed by this centrifuge is 12,000 times that of gravity at the earth's surface. In other words a mass weighing one ounce, placed at the location of the slide and traveling with a speed of approximately four miles a minute produces an outward pull of 12,000 ounces, or 750 lbs.

This instrument is used in bacteriology, biology, pharmacodynamics, and in various cases where an observation of the centrifugal process is of great value in the study of the specimen.



Six frames from a motion picture film of eggs of *arbacia* (a sea urchin) photographed while revolving at 125 r.p.s. on an 8.6 cm. radius. Note the layers of different density and elongation preparatory to pulling into two.

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*Bausch & Lomb Optical Co., Rochester, N. Y. Also Instructor in Instrument Design, University of Rochester.

[1] Dr. Newton Harvey, Professor of Biology, Princeton University, and Dr. Alfred Lee-Loomis, Director, Loomis Laboratory, Tuxedo Park, N. Y.

METERING FOR SPECIAL RATE STRUCTURES*

Demand Meters

By PERRY A. BORDEN† and M. F. BEHAR**

3. Integrated Watt Demand — Block-interval Meters

(Continued)

(d) Electrically Actuated Indicating Type.

There have been produced a number of demand registers in which the mechanism, instead of being in direct mechanical connection with the meter, is operated by impulses derived from an electrical contact system periodically actuated by the watthour meter. While this really constitutes a form of telemeter it fills such an important place in the field of demand measurement as to justify treatment in this section. As typical of this class there may be considered the General Electric Type M-4, of which a diagram is shown in Fig. 43-12. A contactor, Fig. 43-13, is installed in the watthour meter and serves to energize the operating coil of an electromagnet in the demand unit. This, through a ratchet system and gear train, serves to advance a pointer. At the end of the set time interval, a lever operated by the timing element operates mechanically to open the gear train, allowing the pointer-moving element to return to zero, but leaving the maximum pointer in place. The gear train is then automatically reconnected, and subsequent operations of the contact cause the driving mechanism again to move forward; but the maximum pointer will not be re-engaged unless the mechanism moves farther than in any preceding time interval. Thus there will be obtained on the scale an indication of the maximum energy consumption averaged over the selected time interval.

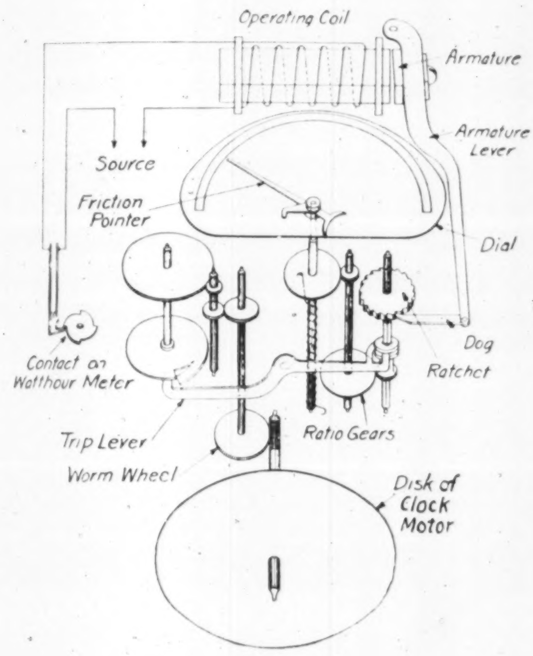

Fig. 43-12

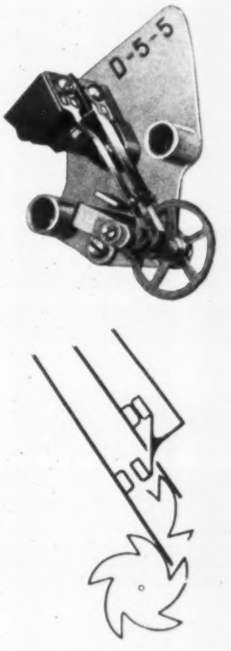

Fig. 43-13

(e) Recording Block-interval Demand Meters.

In the indicating demand meter the reading obtained from the dial is limited to an indication of the maximum demand in any interval since the register was last reset, and no information is available as to the day or the time of day

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*Fifteenth chapter (XLIII) of Part Seven (Handbook of Industrial Electrical Measurements and Control) of Béhar's *Manual of Instrumentation*. See editorial announcement of this series on page A7 of November 1933 *Instruments*. Each chapter is subjected to a final revision shortly before its appearance in this serial form, in order to assure that the subject matter is thoroughly up-to-date. This new book is not published serially in any other periodical. Entire contents copyright. To be issued in book form on or about Jan. 1, 1936.

†Member A.I.E.E.

**Editor, *Instruments*

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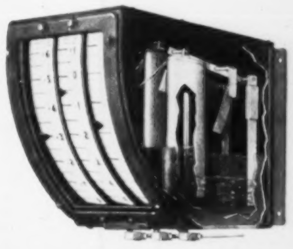

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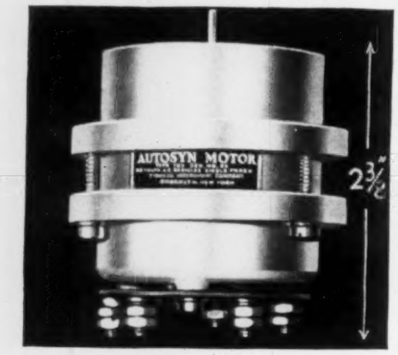

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32
212

PRESSURE...

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30
OIL
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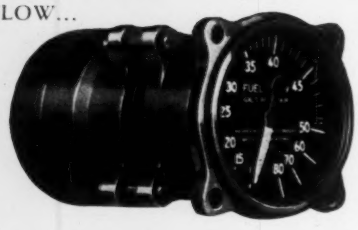

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when this demand occurred. In the recording demand meter, on the other hand, there is provided a measure of the demand in each individual interval and it is necessary only to select from the chart the greatest of these in order to know the maximum demand in the time under consideration. The demand for each day, too, may be determined: and the chart as a whole provides a record from which may be obtained a good estimate of the characteristic load curve.

Fig. 43-14 is a diagram of the Westinghouse Type "RA" demand meter directly driven by a polyphase watthour meter element; and Fig. 43-15 shows the instrument with its cover removed. The watthour meter disk shaft operates a standard register in the usual manner, and at the same time advances pen *P* across the chart surface. At the end of each time interval the tripping rod actuated by a powerful clock movement pushes against rod *F*, demeshing the gear train: and weight C immediately sets the pen to zero, after which the gearing is immediately re-engaged and a new demand interval begun. The upper spring *I* actuates an escapement in the ordinary manner and provides accurate timing. The lower spring *T* is periodically released by action of the escapement-controlled mechanism, and acts quickly to rotate wheel *Y* through a small angle, when it is again stopped. Removable studs on the periphery of this wheel actuate a bell-crank lever *H* which controls the motions of the tripping rod. The number of impulses in a given time is governed by the number of studs mounted on the wheel *Y*. Each time the spring *T* acts it advances the strip chart a short distance, leaving a square-topped indication of the pen position before the pen is released and set to zero. A sample of the chart (of which the graduated portion is 5 inches wide) is shown in Fig. 43-17.

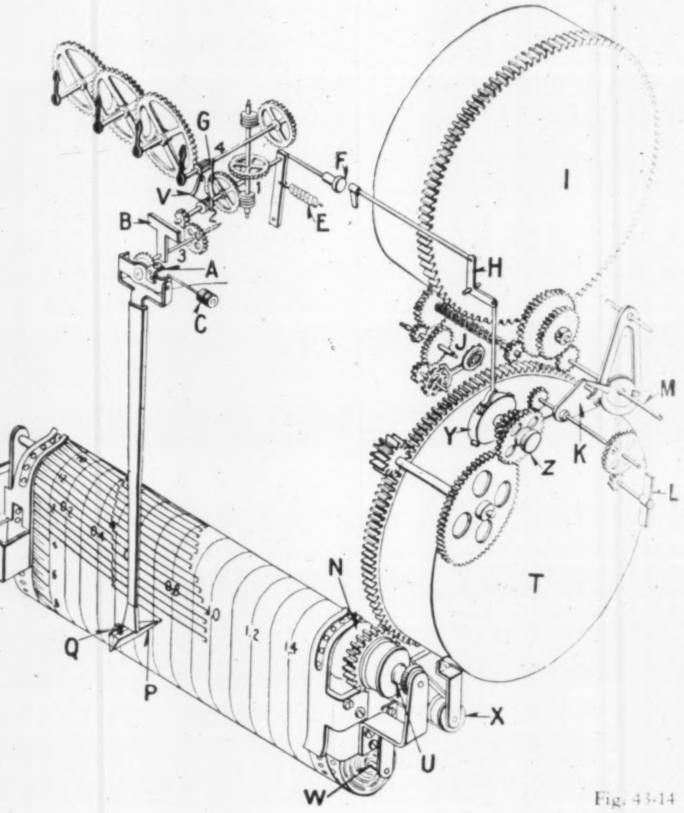

Fig. 43-14

This meter is available also in an electrical impulse operated form, Fig. 43-15, the recording mechanism being identical with that shown in Fig. 43-14, and the counting train and demand pointer being advanced by periodic impulses derived from contacts on the watthour meter shaft.

A more recent development in recording demand meters is found in the Westinghouse Type "RB," Fig. 43-16. The operating principle of this meter is similar to that of the direct operated "RA," but the mechanism has been developed into a more compact form and timing is derived from a synchronous electric clock.

The General Electric Co. produces a strip-chart recording demand meter of the direct-connected type, similar in its general principles to those just described. Fig. 43-18 shows one of these instruments arranged for switchboard service. In this meter the driving element is a Telechron motor which performs

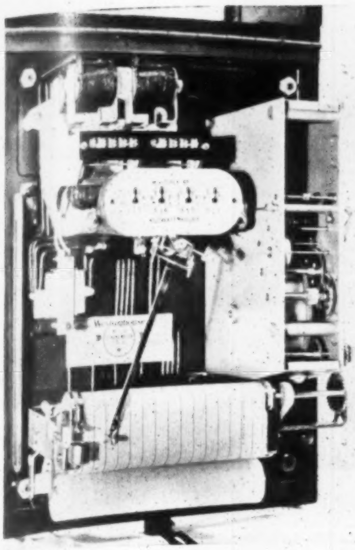

Fig. 43-15

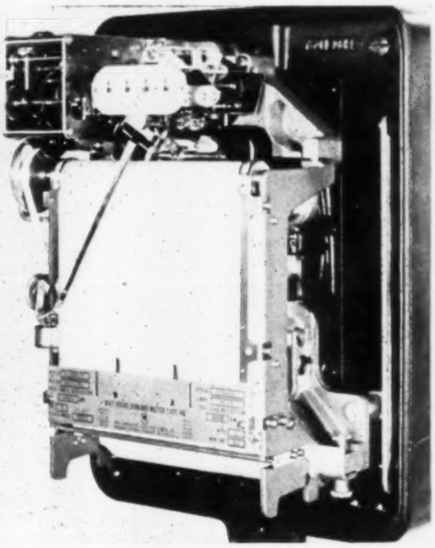

Fig. 43-16

the duties of driving and rerolling the chart, winding a resetting spring, and actuating the resetting mechanism. The chart advances steadily, but at the moment of resetting the pen makes a small hook or "quirk" at the end of the line, thus definitely marking its maximum excursion, after which the pen is forced back to its zero position and re-engaged. Fig. 43-19 shows a portion of the chart, which has a graduated width of 5 inches.

A simple and well-known round-chart recording demand meter of the impulse type is found in the General Electric "Type G" line, of which there are several variants. Fig. 43-20 is a diagram showing the essentials of the mechanism. The recording member is advanced across the chart by impulses from watt-hour meter contacts similar to those shown in Fig. 43-13. A quick-acting cam driven by a synchronous clock motor periodically releases the pen, allowing it to reset to its zero position. This demand meter employs a metal stylus on a chart of waxed paper with a colored background, instead of the conventional inking devices. In the standard arrangement the zero is located near the center of the chart, spreading out the individual records for each interval around the full-scale position. The instrument may, however, be obtained with zero and

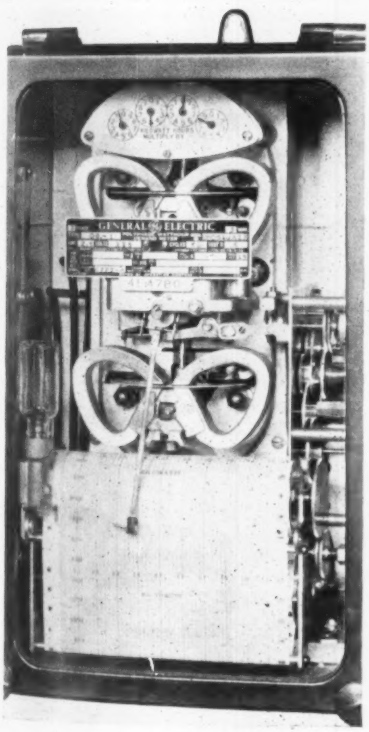

Fig. 43-18

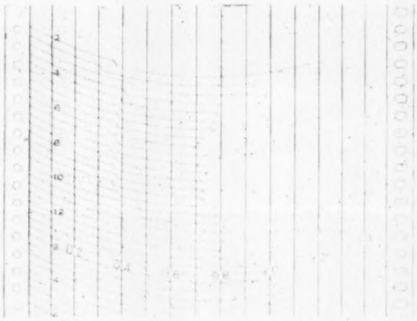

Fig. 43-17

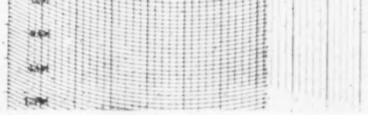

Fig. 43-19

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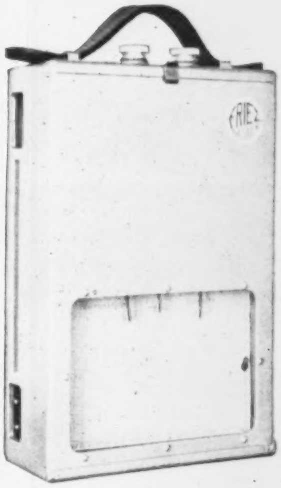

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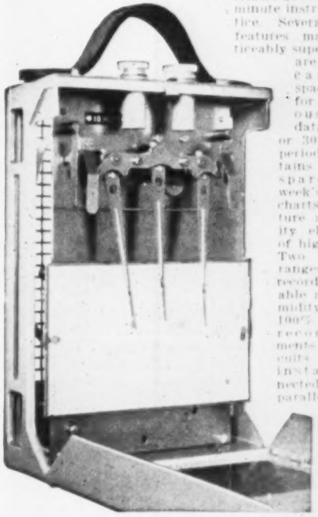

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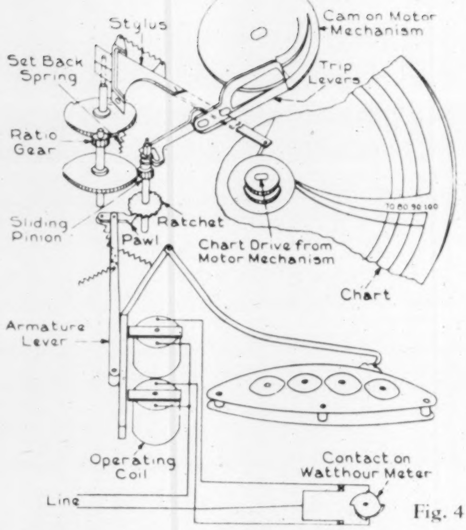

Fig. 43-20

Fig. 43-21

full scale positions transposed, so that the individual records around zero stand out more clearly, as well as the corresponding time graduations. See Fig. 43-21

(f) Characteristics of the Block-interval Class.

Against demand meters of the block-interval class there has been urged the objection that since the time interval during which each averaging process takes place is determined solely by the timing mechanism in the meter, it is not possible for the device to select the demand period during which the average was the greatest of all the averages, so that the maximum demand as given by the meter will be only the mean power consumption in that interval which gave the greatest consumption among the intervals which the meter happened to select. This will be understood by reference to Fig. 43-22, which is a graph representing a steady load applied suddenly at a time *a*. If the beginning of a time interval of a block-interval demand meter connected to measure this load coincides with the time of application of the load, the position of the pointer on its first excursion up the scale will be represented by the dotted line *a-b*; and if the load continues steady until the end of the first time interval the pointer will have reached a position representing the value of the load; and the maximum pointer will continue to indicate this value so long as the load does not go higher. If the load were suddenly to be cut off at the instant the pointer reached a reading corresponding to its value, the demand reading would remain at that maximum value, and would truly represent the average for that particular interval.

If, on the other hand, the timing of the meter happened to be such that the first demand interval was terminated when the load had been on for a time equal to half this interval, as at *c*, the meter would reset to zero, and the demand indicated for that interval would be equivalent to half the value of the steady load. Upon initiation of the succeeding interval the demand meter

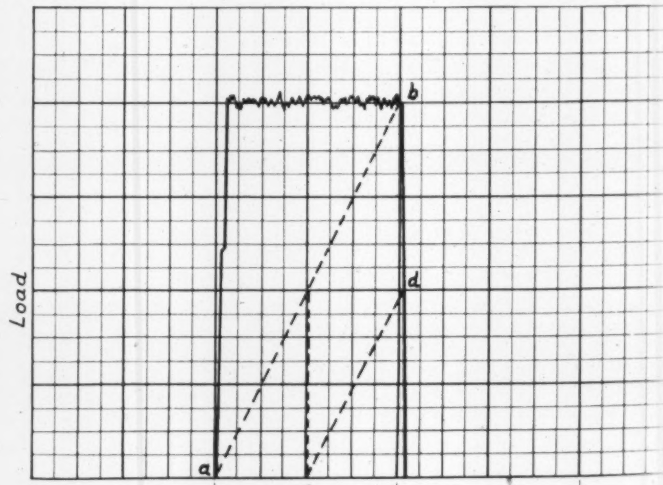

Fig. 4

would again proceed to build up a reading, the indication following the dotted line cd and if the load were to be maintained sufficiently long this second interval would provide a correct indication of the demand. If, however, as in the preceding case, the load were to be suddenly cut off at the time *b*, the meter would reset to zero, leaving the pointer half way up the scale as before. Thus, the maximum demand as indicated by the meter would be half the true average. Therefore it will be seen that two similar demand meters with identical time periods, but having these periods out of synchronism, might differ in their indications by an amount as great as half the value of the steady load. While theoretically this error may be as much as 50 percent, it is found in practice that, except under the most unusual conditions, the likelihood of the timing mechanism synchronizing with load variations (and maintaining this synchronism over considerable periods) is so small as to render the probability of errors from this source practically negligible.

There are integrating demand meters in which the possible error from this source is minimized by causing the averaging process to be performed simultaneously over a group of equal but overlapping time intervals, a ratchet device or its equivalent selecting the maximum of these as the true demand. In others of these[1] the progress of the load is caused to displace a number of discrete mechanical units, such as pins or balls, at a rate varying with the value of the load. The number of these displaced units within a time interval corresponding to that for which the instrument is adjusted is continuously subjected to measurement, and the greatest value so obtained represents the maximum demand on the system. So far as is known, none of these devices is now in commercial production.

A form of recording demand meter developed by one of the authors[2] for the purpose of providing a standard in an extended series of comparative tests on demand meters is shown in Fig. 43-23. In this instrument a paper chart is caused to advance at a speed proportional to the load on the circuit, and a pen is propelled across the paper at a constant speed in a direction perpendicular to the travel of the chart. The first motion is accomplished by means of a watthour meter governing the speed of the paper feed; and the second motion is produced by a clock, winding a cord about a friction-driven drum, so that the pen makes its transit of the paper in a time corresponding to the least of the intervals involved in the investigation (in this case 10 minutes). At the end of each interval a contactor driven by the clock energizes an electrical device which forcibly returns the pen to its zero position, the cord unwinding from its drum which slips on the arbor of the clock. As the return of the pen is practically instantaneous it will be seen that the record on the chart takes the form of a series of successive curves, one above the other, the corresponding ordinates on successive curves being separated by intervals of 10 minutes. The slope of a curve at any instant is proportional to the load at that instant; and the series of curves may be considered as translated portions of one continuous curve whose height from the point of starting represents the integrated value of the load.

Since measurement along any ordinate represents the advance of the paper, i.e., the integrated load, during the time period between two crossings of that ordinate by the pen, it manifestly represents the average load or demand dur-

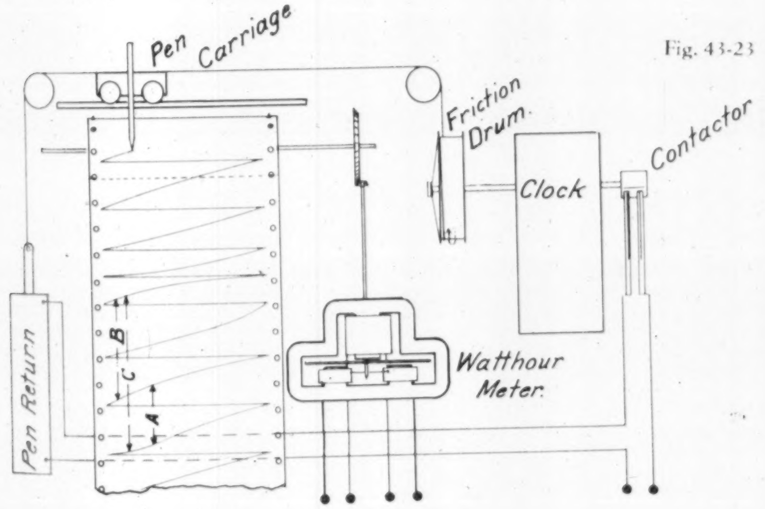

Fig. 43-23

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[1] U. S. Patent 1,094,439: H. S. Hatfield, April 28, 1914.
U. S. Patent 1,726,331: E. M. Ashworth; Aug. 27, 1929.

[2] P. A. Borden. Measurement of Maximum Demand & Determination of Load Factor. *Transactions A.I.E.E.*, Vol. 39, 1920, Pages 1847-1894.

"Accidents"

Are Not Necessary

For Solving Invention Type Engineering Problems

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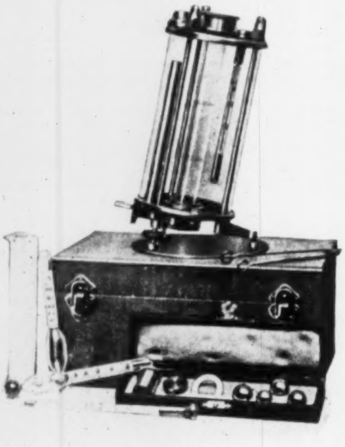

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ing that period. It only remains, then, for the measurement of the maximum demand, to select that ordinate whose length between two successive curves is greatest, and to express its length in terms of the units measured by the meter. Similarly, demands for twice the normal time period of the meter may be scaled off by measuring the greatest ordinate between alternate curves and for greater multiples of the normal period, by selecting the desired number of curves to be spanned. Thus, from the one chart, determination may be made of not only the true maximum demand for the fundamental period, but the demand for any multiple of that period. Thus, on the chart shown in Fig. 43-23 the maximum ten-minute demand is represented by the distance A, the twenty-minute demand by $B/2$ and the thirty-minute demand by $C/3$. An interesting application of this method to the control of load is shown in a subsequent patent assigned to the General Electric Co.[3]

4. Lagged Demand Meters.

(a) General Considerations.

The lagged demand meter is essentially an indicating or recording instrument in which the movement of the deflecting element is retarded (not "held back" but "slowed down") so that a measure of the load may be obtained only after the lapse of a predetermined time interval. This is equivalent to providing the movement with a high degree of overdamping. In a simple indicating or recording instrument, the characteristic law of the damping is of secondary importance. In a lagged demand meter this law forms an essential part of the measurement; it must be definite; it must be an invariable characteristic of the meter.

There is no such thing as a perfect lag characteristic suitable for all demand metering applications, but "true lag" (that of the logarithmic-decrement curve, as in thermometric lag) has advantages, among them the property of requiring only one numerical value—the *time* required for the indicating element to cover a given fraction of its scale travel corresponding to a sudden change in the measured magnitude. (For the lag *coefficient* this fraction is 1/2.718, i.e., the reciprocal of the base of natural logarithms; for the *demand interval* this fraction is generally 9/10.)

Herein lies an important difference between the block-interval demand meters discussed in the preceding section, and the lagged demand meters:

In a block-interval meter, the characteristic demand period is determined by its mechanical structure, and is the time elapsing between the engagement and disengagement of the mechanism which advances the demand pointer up scale. In the lagged demand meter, on the other hand, the characteristic time interval is the time required for the demand pointer to make a given fraction of a complete response to a change of the measured magnitude from one value to another. In lagged demand meters generally approximating the logarithmic law, the rate of approach of the demand pointer to its ultimate position varies with the proportion of its excursion yet to be traversed. In Fig. 43-24 is shown a graph of a suddenly applied steady load, together with curves representing demand as determined by different methods during the period immediately following the application of the load. Curve *A* shows the reading of a demand meter whose indication approaches its final value at a uniform rate, and curve *B* the successive positions of a demand pointer which follows the logarithmic

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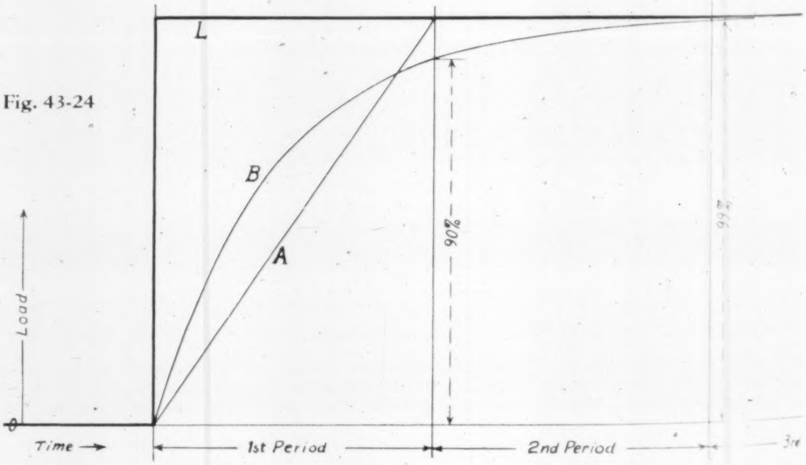
[3] U. S. Patent 1,610,038: W. T. Chapman, Dec. 7, 1926.

Fig. 43-24



THE 1935
INSTRUMENTS INDEX

Register of
Instruments, Meters and other Devices

for measuring, testing, controlling, surveying, research and all other technical purposes; also timepieces, automatic devices, relays, regulated valves, precision devices and all apparatus pertaining to measurement and control.

Sections

1. INDEX OF INSTRUMENTS AND APPARATUS

In this section are listed instruments and devices used for measurement, inspection, testing and automatic control. Under each heading appear the names of the companies which make and sell it. Anyone who wants to know where he can buy or secure information on a certain product can turn to this section, find the product properly indexed and cross-indexed, see under it the names of the manufacturers who make it.

2. INDEX OF TRADE NAMES

In this section can be found the trade name of the product in its proper alphabetical place, with the product it designates and the name of its manufacturer.

3. DIRECTORY OF MANUFACTURERS' NAMES AND ADDRESSES

Here are listed all manufacturers included in the directory, with complete addresses.

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To the User

This Index is primarily a source of information as to manufacturers or the exclusive or territorial sales agents of manufacturers.

In most directories, the address found opposite the company's name is keyed by the publisher for advertising reasons. This practice has not been followed in the preparation of this Index. The publishers would therefore appreciate your mentioning The Instruments Index, when writing to any of the companies listed. Also, if possible, send us a copy of the letter written to the manufacturer.

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Instruments, apparatus, etc. are indexed under the main noun as the key word. In cases where a name is ambiguous, or where the item is known equally well under two or more names, companies making such devices are listed under one subject and cross-references inserted under the other headings.

The asterisk (*) following the company name indicates that the company manufactures the item.

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Suggestions

We shall appreciate suggestions regarding:

1. Headings not at present found in this Index which should be there,
2. Firms listed erroneously, and
3. Other inaccuracies which may have crept in despite all precautions.

Completeness

Over 1000 manufacturers were canvassed by The Instruments Publishing Company in the last four months. Those that did not fill in our first questionnaire after one month received a second one. Again, a third questionnaire was sent to non-responders at the end of the second month. In the last few weeks we even sent representatives to call on manufacturers, urging them to check *every* listed item they made. Therefore, the omission of any manufacturer's name under any heading is due to the negligence of someone in his own organization—not to The Instruments Publishing Co.

For example, on the opposite page, there is a heading with only one manufacturer's name under it; whereas we know that this class of devices is made by at least three other manufacturers. As a matter of fact, these manufacturers checked several *types* belonging to this *class,* and their names appear correctly under these type designations on later pages.

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See Testing Machines, Abrasion

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Western Scientific Co.
Jewelers
Voland & Sons,, Inc.*
Joly's
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.*
Denver Fire Clay Co.
Eimer & Amend
Empire Lab.Sup.Co.,Inc.
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Macalaster Bicknell Co.
N. J. Lab. Supply Co.
Schaar & Co.
Walker & Co.,Inc.,G.T.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.
Magnetic
Amer. Askania Corp.*
Magnetically Damped
Empire Lab.Sup.Co.,Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Macalaster Bicknell Co.
N. J. Lab. Supply Co.

BALANCES
Magnetically Damped (Cont'd)
Seederer-Kohlbusch, Inc.*
Torsion Balance Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.
Seederer-Kohlbusch,Inc.*
Micro
Ainsworth & Sons, Inc., Wm.*
Aloe Co., A. S.
American Inst. Co.*
Braun Corp.
Central Scientific Co.
Curtin&Co.,Inc.,W.H.
Denver Fire Clay Co.
Eimer & Amend
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Gilmore Drug Co., W.J.
Green Brothers, Inc.
Greiner Co., Emil
Heil Chem. Co., Henry
Heusser Inst. Mfg. Co.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Macalaster Bicknell Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Schaar & Co.
Seederer-Kohlbusch,Inc.*
Sci. Glass App. Co.
Stan. Scien. Sup. Corp.
Teschner-Quinn Corp.
Torsion Balance Co.*
Voland & Sonds, Inc.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Precision, for Weights and Measures
Gurley, W. & L. E.
Pulp
Seederer-Kohlbusch, Inc.*
Voland & Sons, Inc.*
Special High Sensitivity
Ainsworth & Sons, Inc., Wm.*
Specific Gravity
Aloe Co., A. S.
American Inst. Co.*
Binckley, Geo. Sydney*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.*
Curtin & Co., Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Exact Weight Scale Co.*
Fisher Scientific Co.
Fuess, Inc., R.
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil
Heil Chem. Co., Henry
Heusser Inst. Mfg. Co.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Macalaster Bicknell Co.
Newark Scale Wks., Inc.*
N. J. Lab. Supply Co.
N. Y. Biol. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Permutit Co.*
Pfaltz & Bauer, Inc.
Rascher & Betzold
Roller-Smith Co.*
Refinery Supply Co.*
Ruska & Co., Inc., W.*
Schaar & Co.
Sci. Glass App. Co.
Seederer-Kohlbusch, Inc.*
Stan. Scien. Sup. Corp.
Teschner-Quinn Corp.
Torsion Balance Co.*
Walker & Co.,Inc.,G.T.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.
Spring
Aloe Co., A. S.
Braun Corp.
Central Scientific Co.
Chatillon & Sons, John*
Chicago Apparatus Co.
Denver Fire Clay Co.
Eimer & Amend
Empire Lab.Sup.Co.,Inc.*
Fisher Scientific Co.
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Macalaster Bicknell Co.
N. J. Lab. Supply Co.
N.Y. Biol. Supply Co.
Riehle Test. Mach. Div.
Roller-Smith Co.*

BALANCES
Spring (Cont'd)
Schaar & Co.
Sci. Glass App. Co.
Stan. Scien. Sup. Corp.
Walker & Co.,Inc.,G.T.
Welch Mfg. Co., W. M.*
Wilkens-Anderson Co.
Surface Tension
Torsion Balance Co.*
Torsion
Aloe Co., A. S.
Amer. Askania Corp.
American Inst. Co.*
Braun Corp.
Byram, H. F.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Eimer & Amend
EmpireLab.Sup.Co.,Inc.
Exact Weight Scale Co.*
Fisher Scientific Co.
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.
Macalaster Bicknell Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Refinery Supply Co.
Ruska & Co., Inc.,W.
Schaar & Co.
Sci. Glass App. Co.
Scott Co., Henry L.
Stan. Scien. Sup. Corp.
Teschner-Quinn Corp.
Testing Machines, Inc.*
Torsion Balance Co.*
Walker & Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Vernier
Seederer-Kohlbusch, Inc*
Vertical Field
Amer. Askania Corp.
Empire Lab.Sup.Co.,Inc*
Howe & French, Inc.
Macalaster Bicknell Co.
Volumetric Flask
Seederer-Kohlbusch, Inc*
Westphal
Aloe Co., A. S.
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Daigger & Co., A.
Eimer & Amend*
Fisher Scientific Co.
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Macalaster Bicknell Co.
Newark Scale Wks., Inc*.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Podbielniak Ind. Res. & Eng. Labs.
Rascher & Betzold
Refinery Supply Co.
Schaar & Co.
Sci. Glass App. Co.
Seederer-Kohlbusch, Inc*
Stan. Scien. Sup. Corp.
Torsion Balance Co.*
Troemmer, Henry*
Walker & Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.

BALANCING MACHINES
Dynamic
Commercial Eng. Labs.*
Electrocon Corp.*
General Electric Co.*
Globe Tools Engs. Co.*
Olsen Test.Mach.Co., T.*
PrecisionBal.Mach.Co.*
Suter, Alfred*
Static
Globe Tools Engs. Co.*
Olsen Test. Mach.Co.,T.*
Suter, Alfred*

BALLISTIC INSTRUMENTS
Aloe Co., A. S.
Bausch & Lomb Opt. Co.*
Chicago Apparatus Co.
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.*
Leitz, Inc., E.*
Scherr Co., George*
Spencer Lens Co.*
Pre. Ther. & Inst. Co.*
Rawson Elec. Inst. Co.*
Western Scientific Co.
Zeiss Inc., Carl

BARKOMETERS
Fleischhauer & Son, Fr.*

BAROGRAPH
American Askania Corp.
Bliss & Co., Inc., John
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc., W.H.
Dietzgen Co., Eugene
Friez & Sons, Inc.,J. P.*
Fuess, Inc., R.
Gilmore Drug Co., W. J.
Green, Henry J.*
Greene Brothers, Inc.

BAROGRAPHS (Cont'd)
Hand & Sons Co., J. E.
Laboratory Materials Co.
Pacific Scientific Co.
Palo-Myers, Inc.
Taylor Instrument Cos.*
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
White Co. Inc., David

BAROMETERS
Aloe Co., A. S.
Fish-Schurman Corp.*
Mine & Smelter Sup. Co.
Palo-Myers, Inc.
Podbielniak Ind. Res. & Eng. Lab.*
Sargent & Co., E. H.
Testrite Instrument Co.*
Wagner & Son, Carl H.*
Aneroid
American Paulin System
Bauer Ther. Co., Inc.
Bliss & Co., Inc., John
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc.,W.H.
Denver Fire Clay Co.
Dietzgen Co., Eugene
Eimer & Amend
Elliott Co., B. K.
Empire Lab.Sup.Co.,Inc.
Fee & Stemwedel, Inc.*
Fisher Scientific Co.*
Friez & Sons,Inc.,J.P.*
Fuess Inc., R.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil
Gurley, W. & L. E.
Hand & Sons Co., J. E.
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.
Howe & French, Inc.
Kauffman-Lattimer Co.
Kollsman Inst. Co., Inc.*
Laboratory Materials Co.
Mine Safety Appls. Co.*
Negus, T. S. & J. D.
N. J. Lab. Sup. Co.
Pacific Scientific Co.
Post Co., Frederick
Rascher & Betzold
Refinery Supply Co.
Schaar & Co.
Sci. Glass App. Co.
Standard Scien.Sup.Corp.
Taylor Instrument Cos.*
Teltru Instrument Co.
Walker & Co.,Inc.,G.T.
Warren-Knight Co.
Weksler Ther. Corp.*
Welch Mfg. Co., W. M.
Western Scientific Co.
White Co., Inc., David
Wilkens-Anderson Co.
Zeiss, Inc., Carl
Mercurial
Aeromarine Inst.Co.,Inc.*
Bauer Ther. Co., Inc.
Bliss & Co., Inc., John
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc.,W.H.
Defender Aut. Reg. Co.*
Denver Fire Clay Co.
Dodge Co., A. J.
Draper Mfg. Co.*
Dwyer Mfg. Co., F. W.
Eimer & Amend
Empire Lab. Sup. Co.,Inc.
Fisher Scientific Co.*
Fleischhauer&Son,Fr.*
Friez & Sons, Inc.,J.P.*
Fuess, Inc., R.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Gray Instrument Co.*
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Hand & Sons Co., J. E.
H-B Inst. Co., Inc.*
Heil Chemical Co., H.
Hiergesell & Sons, Wm.
Howe & French, Inc.
Jensen Instrument Co.
Laboratory Materials Co.
Kauffman-Lattimer Co.
Macalaster Bicknell Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
Pacific Scientific Co.
Pre. Ther. & Inst. Co.*
Rascher & Betzold*
Refinery Supply Co.
Schaar & Co.*
Sci. Glass App. Co.
Stand. Scient. Sup. Corp.
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Co.*
Uehling Instrument Co.*
United States Gauge Co.*
Walker & Co., Inc., G. T.
Warren-Knight Co.
Weiss & Son, A. A.*
Weksler Ther. Corp.
Welch Mfg. Co., W. M.*
Western Scientific Co.
White Co., Inc., David
Wilkens-Anderson Co.

BAROMETERS (Cont'd)
Recording
American Paulin System
Bliss & Co., Inc., John
Bristol Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc.,W.H.
Denver Fire Clay Co.
Dietzgen Co., Eugene
Draper Mfg. Co.*
Eimer & Amend
Elliott Co., B. K.
Fisher Scientific Co.*
Friez & Sons, Inc., J.P.*
Fuess, Inc., R.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Hand & Sons Co., J. E.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Mine Safety Appl. Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
Pacific Scientific Co.
Sci. Glass App. Co.
Taylor Instrument Cos.*
Uehling Instrument Co.*
Walker & Co., Inc., G. T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
White Co., Inc., David

BASE PRESSURE AND BASE VOLUME INDEX
American Meter Co.

BATTERY TESTERS
See Testers, Battery

BEAM COMPASS
See Compass, Beam

BEARING CIRCLES
Gurley, W. & L. E.

BEARING TESTERS
See Testers, Bearing

BEATING TESTERS
See Testers, Beating

BEVEL PROTRACTOR
See Protractor, Bevel

BINNACLES
Bliss & Co., Inc., John

BINOCULARS—Day
Bausch & Lomb Opt. Co.*
Bliss & Co., Inc., John
Braun Corp.
Bruning Co., Inc., C.
Chicago Apparatus Co.
Elliott Co., B. K.
Hand & Sons Co., J. E.
Kern Co.
Leitz, Inc., E.
Negus, T. S. & J. D.
Palo-Myers, Inc.
Post Co., Frederick
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
White Co., Inc., David
Zeiss, Inc., Carl
Night
Bausch & Lomb Opt. Co.*
Bliss & Co., Inc., John
Braun Corp.
Elliott Co., B. K.
Hand & Sons Co., J. E.
Kern Co.
Leitz, Inc., E.
Western Scientific Co.
Negus, T. S. & J. D.
Warren-Knight Co.
White Co., Inc., David
Zeiss, Inc., Carl
Ordnance
Bausch & Lomb Opt. Co.*
Denver Fire Clay Co.
Elliott Co., B. K.
Hand & Sons Co., J. E.
Kern Co.
Negus, T. S. & J. D.
Warren-Knight Co.
White Co., Inc., David
Prismatic
Bausch & Lomb Opt. Co.*
Bliss & Co., Inc., John
Chicago Apparatus Co.
Denver Fire Clay Co.
Elliott Co., B. K.
Greene Brothers, Inc.
Gurley, W. & L. E.
Hand & Sons Co., J. E.
Kern Co.
Leitz, Inc., E.
Negus, T. S. & J. D.
New York Biol. Sup. Co.
Testrite Instrument Co.
Warren-Knight Co.
Western Scientific Co.
White Co., Inc., David
Zeiss, Inc., Carl
Spotting
Bausch & Lomb Opt. Co.*
Elliott Co., B. K.
Hand & Sons Co., J. E.
Kern Co.
Testrite Instrument Co.
Warren-Knight Co.
White Co., Inc., David
Zeiss Inc., Carl

BIOLOGICAL SPECIMENS
Pacific Biological Labs.

BLAST METER
BacharachInd.Inst.Co.*
Clark Blast Meter Co., Chas. J.*
Defender Aut. Reg. Co.*
Fuess, Inc., R.
Gordon Co., Claud S.

BLAST METERS (Cont'd)
Shallcross Mfg. Co.*
Water Works Supply Co.

BOB, PLUMB
Lufkin Rule Co.*

BOLOMETER
CambridgeInst.Co.,Inc.*
Hoffman Co., Samuel O.*

BOMBS
Reid Vapor Pressure
Refinery Supply Co.
Specific Gravity
Refinery Supply Co.

BOTTLES
Specific Gravity
LuertzingGlassInst.Co.*
Weighing
LuertzingGlassInst.Co.*

BOXES
Ratio Boxes
Leeds & Northrup Co.*
Thermostat
Thwing Instrument Co.*

BRAKE TESTING METER
See Meter, Brake Testing

BRIDGES, ELECTRICAL
Capacitance
Braun Corp.
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Chicago Apparatus Co.
Clough-Brengle Co.*
General Radio Co.*
Gray Instrument Co.*
Leeds & Northrup Co.*
PremierCrystalLabs.,Inc.*
RCA Mfg. Co., Inc.*
Roller-Smith Co.*
Rubicon Co.*
Welch Mfg. Co., W. M.
Western Elec. Co., Inc.*
Western Scientific Co.
Conductivity
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Braun Corp.
Chicago Apparatus Co.
Eimer & Amend
General Radio Co.*
Gray Instrument Co.*
Leeds & Northrup Co.*
Rubicon Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Hoopes
CambridgeInst.Co.,Inc.*
Gray Instrument Co.*
Leeds & Northrup Co.*
Rubicon Co.*
Inductance
Brown Instrument Co.*
CambridgeInst.Co.,Inc.*
General Radio Co.*
Gray Instrument Co.*
Greene Brothers, Inc.
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.
PremierCrystalLabs.,Inc.*
RCA Mfg. Co., Inc.*
Roller-Smith Co.*
Rubicon Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Kelvin
CambridgeInst.Co.,Inc.*
Eppley Laboratory, Inc.*
Gray Instrument Co.*
Greene Brothers, Inc.
Leeds & Northrup Co.*
Rubicon Co.*
Schaar & Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
Potentiometer
Braun Corp.
Bristol Co., The*
Brown Instrument Co.*
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Chicago Apparatus Co.
Clough-Brengle Co.*
Daven Co.*
Denver Fire Clay Co.
Eimer & Amend
Eppley Laboratory, Inc.*
General Inst. & Cons. Co.
Gray Instrument Co.*
Greene Brothers, Inc.
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Lewis Engineering Co.*
Minn.-HoneywellReg.Co.*
N. J. Lab. Supply Co.
Pacific Scientific Co.
Rubicon Co.*
Schaar & Co.
Sensitive Res. Inst. Co.*
Thermo Con. Devices, Inc.
Walker & Co., Inc. G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Resistance
Braun Corp.
Brown Instrument Co.*
CambridgeInst.Co.,Inc.*
Chicago Apparatus Co.
Clough-Brengle Co.*
Daven Co.*
Eimer & Amend
Eppley Laboratory, Inc.*
General Electric Co.*
General Insts. & Cons.Co.
General Radio Co.*
Gray Instrument Co.*
Leeds & Northrup Co.*
Minn.-HoneywellReg.Co.*
N. J. Lab. Supply Co.
Ohmite Mfg. Co.*
Pacific Scientific Co.
RCA Mfg. Co., Inc.*
Roller-Smith Co.*
Rubicon Co.*
Schaar & Co.
Shallcross Mfg. Co.*

BRIDGES, ELECTRICAL
Resistance (Cont'd)
Sticht & Co., H. H.
Thermo Con. Devices, Inc.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Slide Wire
Braun Corp.
Brown Instrument Co.*
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Chicago Apparatus Co.
Eimer & Amend
General Insts. & Cons.Co.
Gray Instrument Co.*
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Lewis Engineering Co.*
Minn.-HoneywellReg.Co.*
N. J. Lab. Supply Co.
Roller-Smith Co.*
Rubicon Co.*
Schaar & Co.
Sticht & Co., H. H.
Walker & Co., Inc., G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Temperature
Braun Corp.
Bristol Co., The*
Brown Instrument Co.*
Cambridge Inst. Co.,Inc.*
Eppley Laboratory, Inc.*
General Electric Co.*
General Inst. & Cons. Co.
Gray Instrument Co.*
Greene Brothers, Inc.
Hoffman Co., Samuel O.*
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Roller-Smith Co.*
Rubicon Co.*
Thermo Con. Devices, Inc.
Weiss & Son, Albert A.*
Welch Mfg. Co., W. M.*
Wilkens-Anderson Co.
Vacuum Tube
CambridgeInst.Co.,Inc.*
Central Sci. Co.*
Clough-Brengle Co.*
General Radio Co.*
Weksler Ther. Corp.*
Wilkens-Anderson Co.
SensitiveRes.Inst.Corp.*
Wheatstone
Biddle Co., James G.
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Byram, H. F.
Central Scientific Co.*
Cambridge Inst. Co.,Inc.*
Chicago Apparatus. Co.*
Daven Co.*
Engelhard, Inc., Charles
Eppley Laboratory, Inc.*
General Inst. & Cont. Co.
General Radio Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Lewis Engineering Co.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Roller-Smith Co.*
Rubicon Co.*
Schaar & Co.*
Shallcross Mfg. Co.*
Sensitive Res. Inst. Co.*
Sticht & Co., H. H.*
Thwing Instrument Co.*
Walker & Co., Inc., G.T.
Welch Mfg. Co., W. M.
WesternElectricCo.,Inc.
Western Scientific Co.
Wilkens-Anderson Co.

BURRETTES
Aloe Co., A. S.
American Instrument Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Doerr Glass Co., Inc.*
Eimer & Amend*
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Heil Chemical Co., H.
Howe & French, Inc.
Kauffman-Lattimer Co.
Kimble Glass Co.*
Laboratory Materials Co.
Leitz, Inc., E.
Luertzing Glass Inst. Co.*
Macalaster Bicknell Co.*
Matchlett & Son, E.*
Milwaukee Glass Works, Inc.*
Mine & Smelter Sup. Co.
N. J. Laboratory Sup. Co.
New York Biol. Sup. Co.
New York Lab. Supply Co., Inc.
Palo-Myers, Inc.*
Rascher & Betzold*
Podbielniak Ind. Res. & Eng. Lab.*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Sci. Glass App. Co.*
Stand. Glass App. Wks.*
Stand. Scien. Sup. Corp.

BURRETTES
Steele, Eric
Teschner-Quinn Corp.*
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Williams Apparatus Co.*

CABLE TESTERS
See Testers, Cable

CALCULATORS
Aloe Co., A.
Auto. Add. Mach. Mfg.*
Calculagraph Co.*
Felt & Tarrant Mfg. Co.*
Lightning Calculator Co.*
MerchantCal. Mach. Co.*
Monroe Cal. Mach. Co.*
Refinery Supply Co.*
Tavella Sales Co.
Warren-Knight Co.

CALIBRATING BEAMS
Buffalo Scale Co., Inc.*

CALIPER RULES
See Rules, Caliper

CALIPERS
Central Scientific Co.
Millers Falls Co.*
Mine & SmelterSup. Co.
Sargent & Co., E. H.
Welch Mfg. Co., W. M.
Zeiss, Inc., Carl
Bow
Empire Lab. Sup. Co.,Inc
Fisher Scientific Co.
Howe & French, Inc.
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Indicating
Indicating Calipers Corp.*
Inside
Braun Corp.
Chicago Apparatus Co.
Curtin & Co., Inc.,W.H.
Eimer & Amend
Eitzen Co., Louis C.
Empire Lab. Sup. Co.,Inc
Federal Products Corp.*
Fisher Scientific Co.
Greene Brothers, Inc.
Howe & French, Inc.
Indicating Calip. Corp.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Lufkin Rule Co.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Reed Small Tool Works*
Schaar & Co.
Scherr Co., George*
Starrett Co., L. S.*
Testing Machines, Inc.*
Union Tool Co.*
Walker & Co., Inc., G.T.
Western Scientific Co.
Outside
Braun Corp.
Chicago Apparatus Co.
Curtin & Co., Inc.,W.H.
Eimer & Amend
Eitzen Co., Louis C.
Empire Lab. Sup.Co.,Inc
Federal Products Corp.*
Fisher Scientific Co.
Greene Brothers, Inc.
Howe & French, Inc.
Indicating Calip. Corp.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Lufkin Rule Co.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Reed Small Tool Works*
Schaar & Co.
Scherr Co., George*
Starrett Co., L. S.*
Testing Machines, Inc.*
Union Tool Co.*
Walker&Co.,Inc. G.T.
Western Scientific Co.
Square
Empire Lab. Sup.Co.,Inc
Fisher Scientific Co.
Howe & French, Inc.

CALORIMETERS
Central Scientific Co.
Griebel Inst. Co., Inc.*
Mine & Smelter Sup. Co.
Taylor & Co., Inc., W.A.
Welch Mfg. Co., W. M.
Coal
Braun Corp.
CambridgeInst.Co.,Inc.*
Chicago Apparatus Co.
Curtin & Co., Inc., W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Emerson Apparatus Co.*
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Heil Chemical Co., H.
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Parr Instrument Co.*
Rascher & Betzold
Schaar & Co.
Walker & Co., Inc., G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Fuel
Braun Corp.
Curtin & Co., Inc., W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend

CALORIMETERS (Cont'd)
Empire Lab. Sup.Co.,Inc.
Fish-Schurman Corp.*
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Heil Chemical Co., H.
Howe & French, Inc.
Kauffman-Lattimer Co.
Greiner Co., Emil
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Parr Instrument Co.*
Rascher & Betzold
Schaar & Co.
Walker & Co., Inc., G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Gas
AmericanMeterCo.,.Inc.*
Braun Corp.
Chicago Apparatus Co.*
Connelly Iron Sponge & Governor Co.*
Curtin & Co., Inc., W.H.
Cutler-Hammer, Inc.*
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.
Gaertner Scien. Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Hays Corp.*
Heil Chemical Co., H.
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Precision Scien. Co.*
Rascher & Betzold
Refinery Supply Co.
Schaar & Co.
Walker & Co., Inc., G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Steam
Denver Fire Clay Co.
Eimer & Amend
Ellison Draft Gage Co.
Empire Lab. Sup.Co.,Inc.
General Inst. & Cont. Co.
Greene Brothers, Inc.
Greiner Co., Emil
Howe & French, Inc.
Jensen Instrument Co.
Palo-Myers, Inc.
Schaar & Co.
Walker & Co., Inc., G.T.
Western Scientific Co.

CAMERAS, SCIENTIFIC
Aloe Co., A. S.
American Askania Corp.
American Opp. Co.
Braun Corp.
Chicago Apparatus Co.
Elliott Co. B. K.
Fish-Schurman Corp.*
Fuess Inc., R.*
General Radio Co.*
Gilmore Drug Co., W. J.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Mann Instrument Co.*
Spencer Lens Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Photomicrograph
Bausch & Lomb Opt. Co.*
Leitz, Inc., E.*
Zeiss, Inc., Carl*

CAPACITORS
Air and Mica Condensers
Leeds & Northrup Co.*

CARBON DIOXIDE APPARATUS
See Gas Analytical Meters, Carbon Dioxide

CARBON MONOXIDE METERS
See Gas Analytical Meters, Carbon Monoxide

CATHETOMETERS
Aloe Co., A. S.
American Askania Corp.*
Cambridge Inst. Co.,Inc.*
Central Scientific Co.*
Chicago Apparatus Co.
Eimer & Amend
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.
Fuess, Inc., R.*
Gaertner Scien. Corp.*
Mann Instrument Co.*
Welch Mfg. Co., W. M.*
Western Scientific Co.

CATHODE RAY TUBES
General Electron. Corp.*

CELESTIAL GLOBE
Eastern Science Sup. Co.

CEMENT APPARATUS
Luertzing Glass Inst. Co.*

CEMENT MOLDS
Humboldt Mfg. Co.*

CEMENTING GAGES
See Gages, Cementing

CEMENT NEEDLE APPARATUS
Aloe Co., A. S.
American Instrument Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc., W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend*
Empire Lab. Sup. Co.,Inc.

CEMENT NEEDLE APPARATUS (Cont'd)
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Howe & French, Inc.
Humboldt Mfg. Co.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
New York Lab. Supply Co., Inc.
Refinery Supply Co.
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Schaar & Co.
Sci. Glass App. Co.*
Teschner-Quinn Corp.
Walker & Co., Inc., G.T.
Western Scientific Co.
Wilkens-Anderson Co.

CENTRIFUGES
Oil Testing
Boekel&Co.,Inc.,Wm.*
Curtin&Co.,Inc.,W.H.*
Greiner Co., Emil*
Hasler-Tel Co.*
International Equip. Co.*
Williams, Brown & Earle, Inc.*

CHAIN, SURVEYORS
Bruning Co., Inc., C.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Kolesch & Co.
Lufkin Rule Co.*
Post Co., Frederick
White Co., Inc., David*
Zeiss, Inc., Carl

CHAPTOMETER
White Co., Inc., David

CHEMICAL FEEDERS
Automatic pH Control; Dry and Liquid
Wallace Tierman Co., Inc.*

CHEMICAL PORCELAIN
See Porcelain

CHLORINE CONTROL APPARATUS
Taylor & Co., Inc., W.A.*
Wallace & Tiernan Co., Inc.*

CHLORINE TESTING APPARATUS
LaMotteChem.Prod.Co.*

CHOKES
Raytheon Mfg. Co.*

CHRONOGRAPH
Cambridge Inst. Co.,Inc.*
Fuess, Inc., R.*
Gaertner Scien. Corp.*
Gray Instrument Co.*
Pre Ther & Inst. Co.*

CHRONOMETERS
Bliss & Co., Inc., John*
Ferner Co., R. Y.
Gaertner Scien. Corp.*
Greene Brothers, Inc.
Greiner Co., Emil
Hand & Sons Co., J. E.
Negus, T. S. & J. D.
Walker & Co., Inc., G.T.
Waltham Watch Co.*
Western Scientific Co.

CHRONOSCOPE
Gray Instrument Co.*
Marietta Apparatus Co.*
RCA Mfg. Co., Inc.*

CLINOGRAPHS
Sperry-Sun Well Surveying Co.*

CLINOMETERS
Baldwin-Southwark Corp.
Bliss & Co., Inc., John
Central Scientific Co.
Consolidated Ashcroft Hancock Co., Inc.*
Dietzgen Co., Eugene*
Gurley, W. & L. E.
Hand & Sons Co., J. E.*
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Post Co., Frederick
Ruska & Co., Inc., W.*
Taylor Instrument Co.*

CLOCKS
Aristo Import Co., Inc.
Automatic Lighting Co.*
Bliss & Co., Inc., John
Bristol Co.*
Brown Instrument Co.*
Central Scientific Co.
Cincinnati Time Rec. Co.*
Crosby Steam Gage & Valve Co.*
Curtin&Co.,Inc.,W.H.
Ferner Co., R. Y.
Gaertner Scien. Corp.*
Gamewell Co.
Greene Brothers, Inc.
Hand & Sons Co., J. E.
Holtzer-Cabot Elec. Co.*
Howard Clock Co., E.*
Howe & French, Inc.
Jaeger Watch Co., Inc.*
Kollsman Inst. Co., Inc.*
Landis & Gyr, Inc.
Lonergan Co., J. E.*
Lux Clock Mfg. Co., Inc.*
Marsh, Corp., Jas. P.*
Martin-Decker Corp.
Minn-Honeywell Reg.Co.*
Morse Magneto Clock Co.*
N. J. Lab. Supply Co.
Paragon Electric Co.*
Pioneer Inst. Co., Inc.
Sci. Glass App. Co.*
Seth Thomas Clock Co.*
Simplex Time Rec. Co.*

CLOCKS (Cont'd)
Standard Elec. Time Co.*
Star Brass Mfg. Co.*
States Co.*
Stromberg Electric Co.*
Thwing Instrument Co.*
Walker & Co., Inc., G.T.
Wallace & Tiernan Products, Inc.*
Waltham Watch Co.*
Warren Telechron Co.*
Western Elec. Co., Inc.*
Western Scientific Co.

Direct Current
Teletouch Corp.*

Minute Impulse and Synchronous Motor-operated
Stromberg Electric Co.*

Primary
Wallace & Tiernan Co., Inc.*

Secondary
Wallace & Tiernan Co., Inc.*

Stop
Marietta Apparatus Co.

CLOUD & POUR TEST APPARATUS
Aloe Co., A. S.
American Ins. Co.*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Doerr Glass Co., Inc.*
Eimer & Amend*
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Ins. Co., Inc.*
H-B Ins. Co., Inc.*
Heil Chemical Co., H.
Howe & French, Inc.
Humboldt Mfg. Co.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Luertzing Glass Ins. Co.*
Mine & Smelter Sup. Co.
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
New York Lab. Supply Co., Inc.
Palo-Myers, Inc.*
Podbielniak Ind. Res. & Eng. Lab.
Precision Scientific Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Sci. Glass App. Co.*
Stan. Scien. Sup. Corp.
Tagliabue Mfg. Co.,C.J.*
Teschner-Quinn Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

COIL TESTING EQUIPMENTS
Automatic Elec. Co.*
Century Electrical Co.*
Clough-Brengle Co.*
General Electric Co.*
General Radio Co.*
Gray Inst. Co.*
Hy Ef Elec. Prod. Co.*
Inter. Broad. Equip. Co*
Leeds & Northrup Co.*
Niehoff & Co., C. E.*
Roller-Smith Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.
Triplett Elec. Inst. Co.*
West. Elec.-Mech. Co., Inc.*
Western Scientific Co.
Westinghouse E.&M.Co.*
WestonElect.Inst.Corp.*

COLLIMATOR
American Askania Corp.
Bryden Co.*
Fuess, Inc., R.*
Kollmorgen Opt. Corp.*
Mann Inst. Co.*
Pioneer Inst. Co., Inc.*
Western Scientific Co.
White Co., Inc., David
Zeiss, Inc., Carl

Vertical
Gurley, W. & L. E.*

COLOR GRADER
Munsell Color Co., Inc.*

COLORIMETERS
Akatos, Inc.*
Aloe Co., A. S.*
Bausch & Lomb Opt.Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend*
Empire Lab.Sup.Co.,Inc.
Fish-Schurman Corp.*
Fisher Scientific Co.
Gaertner Scien. Corp.*
General Electric Co.*
Gilmore Drug Co., W.J.
Gen. Inst. & Con. Co.
General Radio Co.*
Greene Brothers, Inc.
Greiner Co., Emil*
Griebel Inst. Co., Inc.*
Heil Chem. Co., Henry
Hellige, Inc.*

COLORIMETERS (Cont'd)
Howe & French, Inc.
Laboratory Mat. Co.
Leitz, Inc., E.*
Leurtzing Glass Inst.Co.*
Mine & Smelter Sup.Co.
M-R-H Laboratories*
Munsell Color Co., Inc.*
N. J. Lab. Sup. Co.
N.Y. Lab. Sup.Co.,Inc.
Palo-Myers, Inc.*
Rascher & Betzold
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Sci. Glass App. Co.
Spencer Lens Co.*
Stan. Scien. Sup. Corp.
Tagliabue Mfg. Co.,C.J.*
Teschner-Quinn Corp.
Walker & Co.,Inc.,G.T.
Wallace & Tiernan Prod. Inc.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

COLOR MATCHING OUTFITS
Akatos, Inc.*
Aloe Co., A. S.
Bausch & Lomb Opt Co*
Central Scientific Co.*
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Doerr Glass Co., Inc.*
Eimer & Amend
Empire Lab.Sup.Co.,Inc.
Ess Instrument Co.*
Fish-Schurman Corp.*
Fisher Scientific Co.
General Electric Co.*
Gilmore Drug Co., W.J.
Greiner Co., Inc., O. R.*
Macbeth Daylighting Co. Inc.*
Marietta Apparatus Co.*
M-R-H- Laboratories*
Munsell Color Co., Inc.*
Palo-Myers, Inc.*
Rawson Elec. Inst. Co.*
Ricker Instrument Co.*
Scherr Co., George*
Sheldon Elec. Corp.*
Thwing Inst. Co.*
Wallace & Tiernan Prod. Inc.*
Watts Elec. Con. Inc.*
Western Scientific Co.
Westinghouse E&M.Co.*
Weston Elec. Inst. Corp*

COMBUSTION CONTROL EQUIPMENT
American Askania Corp.*
Area Regulators, Inc.*
Bailey Meter Co.*
Braun Corp.
Brooke Eng. Co., Inc.*
Cambridge Inst.Co.,Inc.*
Brown Inst. Co.*
Carrick Eng. Co.*
Cook Electric Co.*
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.*
Defender Auto. Reg. Co.*
Detroit Lubricator Co.*
Dickson Co.*
Empire Lab.Sup.Co.,Inc.*
Ess Instrument Co.*
Fish-Schurman Corp.*
Gordon Co., Claud S.
Greiner Co., Emil
Greiner Co., Inc., O. R.*
Hagan Corp.*
Hays Corp.*
Leeds & Northrup Co.*
Mercoid Corp.*
Mine Safety Appl. Co.*
Nat. Airoil Burner Co.*
Minn-Honeywell Reg.Co*
National Reg. Co.*
N. J. Lab. Supply Co.
Paragon Electric Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Refinery Supply Co.
Sargent & Co., E. H.
Sci. Glass App. Co.
Shallcross Controls, Inc.*
Smoot Eng. Corp.*
Tefft-Jackson, Inc.*
Thermo Con. Dev. Inc.
Western Scientific Co.

COMMUNICATION MEASURING INSTRUMENTS
Automatic Elec. Co.*
Clough-Brengle Co.*
Ferranti Electric, Inc.
Ferris Instrument Corp.*
General Electric Co.*
General Radio Co.*
Henschel&Co.,Inc.,C.J.*
Hickok Elec. Inst. Co.*
Holtzer-Cabot Elec. Co.*
Int. Broadcasting Equip. Co.*
Kellogg Switchboard & Sup. Co.
Lampkin Labs.*
Leeds & Northrup Co.*
Lewis Eng. Co.*
Martin-Decker Corp.*
Prem. Crystal Lab.,Inc.*
Roller-Smith Co.*
Rawson Elec. Inst. Co.*
RCA Mfg. Co., Inc.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Triplett Elec. Inst. Co.*
United Sound Eng. Co.*
Western Elec. Co., Inc.*
Weston Elec. Inst.Corp.*

COMPARATORS
Optical
American Askania Corp.
Bausch & Lomb Opt.Co.*
Cambridge Inst.Co.,Inc.*
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.
Eimer & Amend*
Ferner Co., R. Y.
Fish-Schurman Corp.*
Fuess, Inc.,R.*
Gaertner Scientific Corp*
Howe & French, Inc.
Jones & Lamson M. Co.*
Kern Co.
Mann Inst. Co.*
Marburg Bros., Inc.
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
Precision G. & T. Co.*
Scherr Co., George*
Van Kueren Co.*
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

COMPASSES
Denver Fire Clay Co.
Eimer & Amend
Griebel Inst. Co., Inc.
Kollsman Inst. Co.,Inc.*
Mine & Smelter Sup. Co.
Testrite Inst. Co.*
U. S. Gauge Co.*

Aircraft
Star Compass Co.*

Automobile
Star Compass Co.*

Azimuth
Aeromarine Inst.Co.,Inc*
American Askania Corp.
Dietzgen Co., Eugene*
Fuess, Inc., R.
Gurley, W & L. E.*
Hand & Sons Co., J.E.*
Negus, T. S. & J. D.*
Pioneer Inst. Co., Inc.*
Western Scientific Co.
White Co., Inc., David

Beam
Bruning Co., Inc., C.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Friez & Sons, Inc., J.P.*
Kern Co.
Kolesch & Co.
Post Co., Frederick
Wade Instrument Co.*
Warren-Knight Co.
White Co., Inc., David

Dip
Chicago Apparatus Co.*
Elliott Co., B. K.
Gurley, W. & L. E.*
Kolesch & Co.
Post Co., Frederick
Taylor Instrument Co.*
Walker & Co.,Inc.,G.T.
Western Scientific Co.
White Co., Inc., David

Drafting Room
Bruning Co., Inc., C.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Gurley, W. & L. E.
Kern Co.
Kolesch & Co.
Post Co., Frederick
Soltmann, Inc., E. G.*
Tavella Sales Co.
Wade Instrument Co.*
White Co., Inc., David

Earth Induction
American Askania Corp.
Kern Co.
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Walker & Co.,Inc.,G.T.
Western Scientific Co.

Gyro
American Askania Corp.
Sperry Gyro. Co., Inc.*

Marine
Star Compass Co.*

Master
American Askania Corp.*

Photoelectric
Hand & Sons Co., J.E.*

Radio
West. Elec. Co., Inc.*

Ship
Baker Compass Co.*
Bliss & Co., Inc., J.*
Hand & Sons Co., J. E.*
Negus, T. S. & J. D.*
Sherman, L. A.*
Star Compass Co.*

Spherical
Hand & Sons Co., J.E.*

Telltale
Hand & Sons Co., J.E.*
Negus, T. S. & J. D.*
Weston Scientific Co.*

COMPENSATION MAGNETIC
Hand & Sons Co., J.E.*

CONCENTRATION RECORDERS
Elgin Softeder Corp.*
Esterline-Angus Co.*
Leeds & Northrup Co.*

COMPENSATION METERS
Amer. Dist. Steam Co.*

CONDENSER
Abbe
Aloe Co., A. S.
Bausch & Lomb Opt.Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.

CONDENSERS
Abbe (Cont'd)
Eimer & Amend
Fisher Scientific Co.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Refinery Supply Co.
Schaar & Co.
Sci Glass App. Co.
Spencer Lens Co.*
Stan. Scien. Sup. Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Achromatic
Aloe Co., A. S.
Bausch & LombOpt.Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Eimer & Amend
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Fisher Scientific Co.
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Schaar & Co.
Sci. Glass App. Co.
Spencer Lens Co.*
Stan. Scien. Sup. Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Apochromatic
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Braun Corp.
Central Scientific Co.
Curtin & Co.,Inc.,W.H.
Eimer & Amend
Empire Lab.Sup.Co.,Inc.*
Fisher Scientific Co.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Spencer Lens Co.*
Stan. Scien. Sup. Corp.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Bull's Eye
Bausch & Lomb Opt.Co.*
Eimer & Amend
Empire Lab.Sup.Co.,Inc.*
Gilmore Drug Co., W.J.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Spencer Lens Co.*
Western Scientific Co.
Wilkens-Anderson Co.

Cardioid
Aloe Co., A. S.
Bausch & Lomb Opt.Co.*
Chicago Apparatus Co.
Eimer & Amend
Empire Lab.Sup.Co.,Inc.*
Gilmore Drug Co., W.J.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Electrical
Automatic Elec. Co.*
Chicago Apparatus Co.
Cornell-Dubilier Corp.*
Crowley & Co.,Inc.,H.L.*
Empire Lab.Sup.Co.,Inc.*
Gamewell Co.
General Radio Co.*
Gray Instrument Co.*
Kauffman-Lattimer Co.
Kellogg Switchboard & Sup. Co.*
Leeds & Northrup Co.*
Neihoff & Co., C. E.*
RCA Mfg. Co., Inc.*
Rubicon Co.*
Watts Elec. Con. Inc.*
West. Elec. Co., Inc.*
Western Scientific Co.

Glass
Griebel Inst. Co., Inc.*
Luertzing Glass Inst.Co.*
Mine & Smelter Sup. Co.
Sargent & Co., E. H.
Welch Mfg. Co., W. M.

Paraboloid
Aloe Co., A. S.
Bausch & Lomb Opt.Co.*
Eimer & Amend
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Stan. Scien. Sup. Corp.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Variable
Federal Inst. Corp.*

CONDENSER LEAKAGE RECORDERS

See Recorders, Condenser Leakage

CONDENSER TESTER

Tobe Deutschmann Corp.*

CONDUCTIVITY METERS

Gilmore Drug Co., W.J.
Gray Inst. Co.*
Sargent & Co., E. H.
Thermo Con. Dev., Inc.
Wilkens-Anderson Co.

Controlling

Brown Inst. Co.*
Elgin Softener Corp.*
Engelhard, Inc., Chas.*
Esterline-Angus Co.*
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.*
Refinery Supply Co.

Indicating

Biddle Co., James G.
Braun Corp.
Brown Instrument Co.*
Elgin Softener Corp.*
Engelhard, Inc., Chas.*
Fisher Scientific Co.
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.*
Rawson Elec. Inst. Co.*
Refinery Supply Co.
Roller-Smith Co.*
Rubicon Co.*
Schweitzer & Conrad, Inc.*
Sensitive Res.Inst.Corp.*
Western Scientific Co.
Weston Elec. Inst. Corp.*

Recording

Biddle Co., James G.
Brown Instrument Co.*
Elgin Softener Corp.*
Engelhard, Inc., Chas.*
Esterline-Angus Co.*
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.*
Refinery Supply Co.
Roller-Smith Co.*

CONSISTENCY REGULATORS, Pulp & Paper

See Regulators, Consistency

CONSTANT SPEED & FREQUENCY SETS

Electric Specialty Co.*
General Elec. Co.*
Leeds & Northrup Co.*
Pitometer Log Corp.*

CONTOUR MEASURING PROJECTOR

American Inst. Co.*
Bausch & Lomb Opt.Co.*
Jones & Lamson M. Co.*
Leitz, Inc., E.*
Scherr Co., George*
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

CONTROLS, AUTOMATIC

Amperes

Esterline-Angus Co.*

Beater

Green, Arthur B.*

Boiler Water Concentration

Esterline-Angus Co.*

Combustion

American Askania Corp.*
Arca Regulators, Inc.*
Automatic Products Co.*
Bailey Meter Co.*
Bishop & Babcock Sales Co.*
Braun Corp.
Brooke Eng. Co., Inc.*
Brown Instrument Co.*
Cambridge Inst.Co.,Inc.*
Carrick Eng. Co.*
Cash Co., A. W.*
Cook Electric Co.*
Defender Auto. Reg.Co.*
Denver Fire Clay Co.*
D'Este Co., Julian*
Detroit Lubricator Co.*
Dickson Co.*
Eclipse Fuel Eng. Co.*
Ess Instrument Co.*
Friez & Sons,Inc.,J.P.*
General Controls Co.*
Gordon Co., Claud S.
Greene Brothers, Inc.
Hagan Corp.*
Hays Corp.*
Leeds & Northrup Co.*
McNeill Eng. Equip. Co., T. W.
Mercoid Corp.*
Minn-Honeywell Reg.Co.*
Nat. Airoil Burner Co.*
National Regulator Co.*
Paragon Electric Co.*
Partlow Corp.*
Refinery Supply Co.
R-S Products Corp.
Shallcross Controls, Inc.*
Smoot Eng. Corp.*
Thermo Con. Dev., Inc.
Wilgus Mfg. Co.*

Condensation

American Askania Corp.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Con. Ashcroft Hancock Co., Inc.*
Eclipse Fuel Eng. Co.*
Friez & Sons.Inc.,J.P.*
Leeds & Northrup Co.*
Refinery Supply Co.
Tagliabue Mfg. Co., C.J.*
Thermo Con. Dev., Inc.
Wilbin Instrument Corp.*

Condenser Leakage

Esterline-Angus Co.*

Current

L. A. B. Corp.*

CONTROLS, AUTOMATIC

Cycle

American Opt. Co.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Bristol Co.*
Burgess Labs.,Inc.,C.F.*
Leland Electric Co.*
Summit Ind. Inst. Co.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Wallace & Tiernan Products,Inc.*
Western E.-M. Co., Inc.*

Damper

American Askania Corp.*
Arca Regulators, Inc.*
Atwood & Morrill Co.*
Automatic Prod. Co.*
Bailey Meter Co.*
Bishop & Babcock Sales Co.*
Brooke Eng. Co., Inc.*
Brown Instrument Co.*
Builders Iron Foundry*
Burgess Labs.,Inc.,C.F.*
Carrick Eng. Co.*
Cash Co., A. W.*
Con. Ashcroft Hancock Co., Inc.*
Cook Electric Co.*
Davis Regulator Co.*
Defender Auto. Reg.Co.*
Denver Fire Clay Co.*
D'Este Co., Julian*
Detroit Lubricator Co.*
Ess Instrument Co.*
Foster Eng. Co.*
Friez & Sons,Inc.,J.P.*
Fulton Sylphon Co.*
General Controls Co.*
Gordon Co.,Claud S.
Hays Corp.*
Johnson Service Co.*
Leeds & Northrup Co.*
Lewis Air Cond., Inc.
Martin-Decker Corp.*
Minn-Honeywell Reg.Co.*
Nat. Airoil Burner Co.*
National Regulator Co.*
Paragon Electric Co.*
Plouff Co.*
Powers Regulator Co.*
Refinery Supply Co.
R-S Products Corp.*
Shallcross Controls, Inc.*
Sheer Co., H. M.*
Smoot Eng. Corp.*
Spencer Regulator Co.*
Thermo Con. Dev., Inc.
Watts Regulator Co.*
White Mfg. Co.*
Wilbin Instrument Corp.*
Wilgus Mfg. Co.*

Desuperheat

Mercon Regulator Co.*

Feed Water

American Askania Corp.*
Arca Regulators, Inc.*
Automatic Products Co.*
Bailey Meter Co.*
Bender Warrick Corp.*
Brown Inst. Co.*
Builders Iron Foundry*
Con. Ashcroft Hancock Co., Inc.*
Defender Auto. Reg.Co.*
Eclipse Fuel Eng. Co.*
Elgin Softener Corp.*
Fisher Governor Co.*
Foxboro Co.*
General Controls Co.*
Hagan Corp.*
Jensen Instrument Co.
Leeds & Northrup Co.*
McAlear Mfg. Co.*
Mercon Regulator Co.*
Merritt Eng. & Sales Co. Inc.*
Minn-Honeywell Reg.Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Permutit Co.*
Plouff Co.*
Refinery Supply Co.
Smoot Eng. Corp.
Tagliabue Mfg. Co.,C.J.*
Thermo Con. Dev., Inc.
Watts Regulator Co.*
Wilgus Mfg. Co.*

Filter Rate

American Askania Corp.*
Arca Regulators, Inc.*
Builders Iron Foundry*
Elgin Softener Corp.*
Foxboro Co.*
International Filter Co.*
Simplex V. & Meter Co.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.

Float

American Askania Corp.*
Arca Regulators, Inc.*
Automatic Products Co.*
Bailey Meter Co.*
Cutler-Hammer, Inc.*
Davis Regulator Co.*
Defender Auto. Reg. Co.*
D'Este Co., Julian*
Detroit Lubricator Co.*
Eclipse Fuel Engr. Co.*
Esterline-Angus Co.*
Fish-Shurman Corp.*
Fisher Governor Co.*
Foster Eng. Co.*
Foxboro Co.*
Greene Brothers, Inc.
Jensen Inst. Co.
Klipfel Mfg. Co.*
Leeds & Northrup Co.*
Martin-Decker Corp.*
McAlear Mfg. Co.*
McNeill E. Equip. Co.
Mercoid Corp.*

CONTROLS, AUTOMATIC

Float (Cont'd)

Mercon Reg. Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Refinery Supply Co.
Shallcross Controls, Inc.*
Tagliabue Mfg. Co.*
Thermo Con. Dev., Inc.
Wallace & Tiernan, Products, Inc.*
Water Wks. Supply Co.
Watts Regulator Co.*
White Mfg. Co.*
Wilbin Inst. Corp.*
Wilgus Mfg. Co.*

Flow Proportioning

Schutte & Koertinig Co.*

Fluid Proportioning

Mercon Regulator Co.*

Frequency

Esterline-Angus Co.*
General Elect. Co.*
L.A.B. Corp.*

Furnace

American Askania Corp.*
American Gas Fur. Co.*
Arca Regulators, Inc.*
Bristol Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
BurgessLabs.,Inc.,C.F.*
Carrick Eng. Co.*
Cook Electric Co.*
Defender Auto. Reg. Co.*
Dickson Co.*
Eclipse Fuel Eng. Co.*
Ess Instrument Co.*
Friez&Sons,Inc.,J.P.*
Gordon Co., Claud S.
Hagan Corp.*
Jensen Instrument Co.
Leeds & Northrup Co.*
Leland Elect. Co.*
Lindberg Eng. Co.*
Mercoid Corp.*
Mine Safety App. Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Partlow Corp.*
Nat. Airoil Burner Co.*
Refinery Supply Co.
R-S Products Corp.*
Sargent & Co., E. H.
Shallcross Controls, Inc.*
Sheer Co., H. M.*
States Co.*
Thermo Con. Dev., Inc.
Wilbin Instrument Corp.*

Gravity

American Askania Corp.*
Arca Regulators, Inc.*
Automatic Products Co.*
Bailey Meter Co.*
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Greene Brothers, Inc.
Plouff Co.*
Refinery Supply Co.
Tagliabue Mfg. Co.,C.J.*
Thermo Con. Dev., Inc.

Humidity

American Askania Corp.*
American Inst. Co.*
Arca Regulators, Inc.*
Automatic Products Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Cambridge Inst.Co.,Inc.*
Con. Ashcroft Hancock Co., Inc.*
Curtin & Co.,Inc.,W.H.
Detroit Lubricator Co.*
Empire Lab. Sup.Co.Inc.
Foxboro Co.*
Friez & Sons,Inc.,J.P.*
Greene Brothers, Inc.
H-B Instrument Co. Inc.*
Johnson Service Co.*
Lewis Air Cond., Inc.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Parks-Cramer Co.*
Penn Elec Switch Co.*
Powers Regulator Co.*
Refinery Supply Co.
Struthers Dunn, Inc.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Thwing Instrument Co.*
Wilbin Instrument Corp.*

Humidity & Temperature

American Askania Corp.*
American Instrument Co.*
Amer. Temp. Indic. Co.*
Arca Regulators, Inc.*
Bishop & Babcock Sales Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Con. Ashcroft Hancock Co., Inc.*
Curtin & Co.,Inc. W.H.
D'Este Co., Julian*
Dickson Co.*
Empire Lab.Sup.Co.,Inc.*
Foxboro Co.*
Foster Eng. Co.*
Friez & Sons,Inc.,J.P.*
H-B Inst. Co., Inc.*
Johnson Service Co.*
Lewis Air Cond., Inc.
Lewis Eng. Co.*
Minn-Honeywell Reg.Co.*
National Regulator Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Parks-Cramer Co.*
Powers Regulator Co.*
Refinery Supply Co.
R-S Products Corp.*
Struthers Dunn, Inc.*

CONTROLS, AUTOMATIC

Humidity and Temperature (Cont'd)

Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Thwing Instrument Co.*
Wilbin Instrument Corp.*

K V A

Esterline-Angus Co.*

Lighting

American Askania Corp.
Automatic Light'g Co.*
Cutler-Hammer, Inc.*
General Electric Co.*
Hart Mfg. Co.*
Koch & Co., Paul W.*
Leland Electric Co.*
Paragon Electric Co.*
States Co.*
Struthers Dunn, Inc.*
Thermo Con. Dev., Inc.
Walser Auto. Timer Co.*
Weston Elec. Inst. Corp.*

Liquid Level

American Askania Corp.*
American Meter Co.*
Arca Regulators, Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Bender Warrick Corp.*
Bishop & Babcock Sales Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Con. Ashcraft Hancock Co., Inc.*
Curtin & Co.,Inc.,W.H.
Davis Regulator Co.*
Defender Auto. Reg. Co.*
D'Este Co., Julian*
Detroit Lubricator Co.*
Dickson Co.*
Elect. Con. & Mfg. Co.*
Empire Lab.Sup.Co.,Inc.*
Esterline-Angus Co.*
Fisher Governor Co.*
Foster Eng. Co.*
Foxboro Co.*
Friez & Sons.Inc.,J.P.*
General Electric Co.*
Greene Brothers, Inc.
Howe & French, Inc.
International Filter Co.*
Jensen Instrument Co.
Klipfel Mfg. Co.*
Lawler Auto. Con., Inc.*
Leeds & Northrup Co.*
Liquidometer Corp.*
McAlear Mfg. Co.*
McNeill Eng. Equip. Co., T. W.*
Mercoid Corp.*
Mercon Regulator Co.*
Minn-Honeywell Reg.Co.*
Northern Equip. Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Plouff Co.*
Refinery Supply Co.
Shallcross Controls, Inc.*
Simplex V & Meter Co.*
Smoot Eng Corp.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Union Water Meter Co.*
Wallace & Tiernan Products, Inc.*
Water Level Con. Co.*
Water Works Supply Co.
Wilgus Mfg. Co.*

Moisture

Atlantic Pre. Inst. Co.*

Motor

American Askania Corp.*
Brown Inst. Co.*
Cutler-Hammer, Inc.*
Davis Regulator Co.*
Esterline-Angus Co.*
Friez & Sons,Inc.,J.P.*
Greene Brothers, Inc.
Hart Mfg. Co.*
Leland Elec. Co.*
Mercoid Corp.*
Minn-Honeywell Reg.Co.*
Niehoff & Co., C. E.*
Struthers Dunn, Inc.*
Walser Auto. Timer Co.*
Ward Leonard Elec. Co.*
Paragon Elec. Co.*
Roller-Smith Co.*
Thermo Con. Dev., Inc.

Oil Level

Automatic Products Co.*

Phase

L. A. B. Corp.*

Phosphate Feed

Northern Equip. Co.*

Power

Esterline-Angus Co.*
Watts Elec. Con., Inc.*

Power Factor

Esterline-Angus Co.*

Pressure & Vacuum

American Askania Corp.*
American Meter Co.*
Arca Regulators, Inc.*
Automatic Products Co.*
Bailey Meter Co.*
Bastian Blessing Co.*
Baldwin-Southwark Corp.*
Bishop & Babcock Sales Co.*
Braun Corp.
Bristol Co.*
Brooke Eng. Co., Inc.*
Brown Instrument Co.*
Builders Iron Foundry*
Carrick Engineering Co.*
Cash Co., A. W.
Central Scientific Co.*

CONTROLS, AUTOMATIC

Pressure and Vacuum (Cont'd)

Connelly Iron Sponge & Governor Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc., W. H.
Cutler-Hammer, Inc.*
Davis Regulator Co.*
Defender Auto. Reg. Co.*
Denver Fire Clay Co.*
D'Este Co., Julian
Detroit Lubricator Co.*
Dickson Co.*
Electric Cont. & Mfg.Co.*
Emerson Apparatus Co.*
Empire Lab.Sup.Co.,Inc.*
Ess Instrument Co.*
Esterline-Angus Co.*
Fisher Governor Co.*
Foster Engineering Co.*
Foxboro Co.*
Friez & Sons, Inc., J. P.*
Fulton Sylphon Co.*
Gamewell Co.
General Electric Co.*
General Inst. & Cont. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Inc., O. R.*
Hagan Corp.*
Hays Corp.*
Hydraulic Press Mfg. Co.*
Jensen Instrument Co.
Klipfel Mfg. Co.*
Leeds & Northrup Co.*
Marsh Corp., Jas. P.*
McAlear Mfg. Co.*
Mercoid Corp.*
Mercon Reg. Co.*
Minn-Honeywell Reg.Co.*
National Airoil Burner Co.*
Northern Equipment Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Podbielniak Ind. Res. Eng. Lab.*
Powers Regulator Co.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
R-S Products Corp.*
Shallcross Controls, Inc.*
Smoot Engineering Corp.*
Spencer Thermostat Co.*
Struthers Dunn, Inc.*
Summit Ind. Inst. Co.*
Tagliabue Mfg. Co., C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.*
United States Gauge Co.*
Wallace & Tiernan Products, Inc.*
Wilbin Instrument Corp.*
Wilgus Mfg. Co.*
Wilkens-Anderson Co.

Pyrometer

American Askania Corp.*
American Gas Fur. Co.*
Automatic Temp.Con.Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Curtin & Co., Inc., W. H.
Defender Aut. Reg. Co.*
Dickson Co.*
Eimer & Amend
Fish Schurman Corp.*
Foxboro Co.*
General Inst. & Con. Co.
Gordon & Co., Claud S.
Greene Brothers, Inc.
Griebel Inst. Co., Inc.*
Jensen Instrument Co.
L.A.B. Corp.*
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Pyrometer Inst. Co.*
Refinery Supply Co.
Schaar & Co.
Tagliabue Mfg. Co., C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Thwing Instrument Co.*
Weston Elec. Inst. Corp.*

Rate-Volume

American Askania Corp.*
American Meter Co., Inc.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Brooke Eng. Co., Inc.*
Builders Iron Foundry*
Greene Brothers, Inc.
McAlear Mfg. Co.*
Mercon Regulator Co.*
Refinery Supply Co.
Tagliabue Mfg. Co., C.J.*
Thermo Con. Dev., Inc.

Refrigeration

Allen-Bradley Co.*
American Askania Corp.*
American Ther. Co.*
Arca Regulators, Inc.*
Automatic Products Co.*
Baker Ice Mach. Co.,Inc.*
Bishop & Babcock Sales Co.*
Braun Corp.
Brown Instrument Co.*
Burling Instrument Co.*
Cash Co., A. W.*
Cutler-Hammer, Inc.*
Detroit Lubricator Co.*
Dickson Co.*
Edison, Inc., Thomas A.*
Friez & Sons, Inc., J. P.*
Fulton Sylphon Co.*
General Controls Co.*
General Electric Co.*
Jensen Instrument Co.

CONTROLS, AUTOMATIC

Refrigeration (Cont'd)

Leeds & Northrup Co.*
Marsh Corp., Jas. P.*
Mercoid Corp.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Penn Elec. Switch Co.*
Refinery Supply Co.
Refrigerating [illegible] Co.*
Tagliabue Mfg. Co., C.J.*
Testrite Instrument Co.*
Thermo Con. Dev., Inc.
Wilbin Instrument Corp.*

Specific Gravity

American Askania Corp.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Greiner Co., Inc., O. R.*
Pacific Scientific Co.
Permutit Co.*
Refinery Supply Co.
Tagliabue Mfg. Co., C.J.*
Thermo Con. Dev., Inc.

Speed

Esterline-Angus Co.*

Stoker

Shallcross Controls, Inc.*

Strain-Rate

Baldwin-Southwark Corp.*

Stress-Rate

Baldwin-Southwark Corp.*

Tachometer

Aeromarine Inst. Co., Inc.*
American Askania Corp.*
Amthor Testing [illegible] Co., Inc.*
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Cramer & Co., Inc., R.W.
Denver Fire Clay Co.
Electric Tachometer Corp.*
Esterline-Angus Co.*
Foxboro Co.
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Martin-Decker Corp.*
McDonnell Odometer Co.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Thermo Con. Dev., Inc.

Temperature

Amer. Temp. Ind. Co.*
Atwood & Morrill Co.*
Automatic Products Co.*
Defender Auto. Reg. Co.*
D'Este Co., Julian*
Foster Eng. Co.*
Fox Eng. Co.*
McAlear Mfg. Co.*
Parks-Cramer Co.*
Partlow Corp.*
R-S Products Corp.*

Temperature-Time

American Askania Corp.*
American Gas Fur. Co.*
American Instrument Co.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Bishop & Babcock Sales Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Consolidated Ashcroft Hancock Co., Inc.*
Cramer & Co., Inc., R.W.
Curtin & Co., Inc., W. H.
Dickson Co.*
Eclipse Fuel Eng. Co.*
Edison, Inc., Thomas A.*
Empire Lab.Sup.Co.,Inc.*
Foxboro Co.*
Friez & Sons, Inc., J.P.*
Fulton Sylphon Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Inc., O. R.*
Hart Mfg. Co.*
H-B Inst. Co., Inc.*
Leeds & Northrup Co.*
Lewis Engineering Co.*
Lindberg Engineering Co.
Mercoid Corp.*
Mercon Regulator Co.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Penn Elec. Switch Co.*
Prec. Ther. & Inst. Co.*
Premier Crys. Lab., Inc.*
Pyrometer Inst. Co.*
Refinery Supply Co.
Schaar & Co.
Spencer Thermostat Co.*
States Co.*
Struthers-Dunn, Inc.*
Tagliabue Mfg. Co., C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Thwing Instrument Co.*
Walker & Co., Inc., G. T.
Weston Elec. Inst. Corp.*
Wilbin Instrument Corp.*
Wilkens-Anderson Co.

Thermometer

American Askania Corp.*
American Instrument Co.*
Automatic Products Co.*
Auto. Temp. [illegible] Co.*
Bailey Meter Co.*
Bauer Ther. [illegible] Inc.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*

CONTROLS, AUTOMATIC
Thermometer (Cont'd)
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Dickson Co.*
Empire Lab.Sup.Co.,Inc.*
Fish-Schurman Corp.*
Foxboro Co.*
Friez & Sons, Inc., J. P.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
H-B Inst. Co., Inc.*
Jensen Instrument Co.
L.A.B. Corp.*
Leeds & Northrup Co.*
Lewis Engineering Co.*
Marsh Corp., Jas. P.*
Minn-Honeywell Reg.Co.*
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Partlow Corp.*
Prec. Ther. & Inst. Co.*
Pyrometer Inst. Co.*
Refinery Supply Co.
Sarco Company, Inc.*
Schaar & Co.
Schultheis Corp., E. W.*
Standard Ther., Inc.
Tagliabue Mfg. Co., C.J.*
Taylor Instrument Cos.*
Testrite Instrument Co.*
Thermo Con. Dev., Inc.
Wagner & Son, Carl H.*
Walker & Co., Inc., G.T.
Weiss & Son, Albert A.*
Weksler Ther. Corp.*
Wilbin Instrument Corp.*

Thermostat
American Askania Corp.*
American Instrument Co.*
American Ther. Co.*
Automatic Products Co.*
Bishop & Babcock Sales Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Burling Instrument Co.*
Central Scientific Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Cook Electric Co.*
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Detroit Lubricator Co.*
Dickson Co.*
Edison, Inc., Thomas A.*
Fulton-Sylphon Co.*
Friez & Sons, Inc., J. P.*
Gamewell Co.*
General Controls Co.*
General Electric Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Hagan Corp.*
Hart Mfg. Co.*
H-B Inst. Co., Inc.*
International Broadcasting Equip. Co.*
Jensen Instrument Co.
Johnson Service Co.*
Klipfel Mfg. Co.*
Lawler Auto. Con., Inc.*
Leitz, Inc., E.
Lewis Air Condi., Inc.
Marsh Corp., Jas. P.*
Mercoid Corp.*
Minn-Honeywell Reg.Co.*
National Regulator Co.*
N.Y. Lab. Sup. Co., Inc.*
Pacific Scientific Co.
Partlow Corp.*
Penn Elect. Switch Co.*
Powers Regulator Co.*
Prec. Ther. & Inst. Co.*
Refinery Supply Co.
Sarco Co., Inc.
Schultheis Co., E. W.*
Sheer Co., H. M.*
Spencer Regulator Co.
Spencer Thermostat Co.*
Standard Ther., Inc.*
States Co.*
Steele, Erick F.*
Struthers-Dunn, Inc.*
Taylor Instrument Cos.*
Tagliabue Mfg. Co., C.J.*
Thermo Con. Dev., Inc.
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilbin Instrument Corp.*
Wilcolator Co.*
Wilkens-Anderson Co.*
Williams Apparatus Co.*

Time
American Askania Corp.*
Arca Regulators, Inc.*
Auto. Light Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Bullard Co., E. D.*
Consolidated Ashcroft Hancock Co., Inc.*
Cramer & Co., Inc., R.W.
D'Este Co., Julian*
Eagle Signal Corp.*
Edison, Inc., Thomas A.*
Esterline-Angus Co.*
Friez & Sons, Inc., J. P.*
Gamewell Co.*
General Electric Co.*
Gordon Co., Claud S.
Greene, Brothers, Inc.
Hart Mfg. Co.*
Howard Clock Co., E.*

CONTROLS, AUTOMATIC
Time (Cont'd)
Johnson Service Co.*
Landis & Gyr, Inc.
Leland Electric Co.*
Mercoid Corp.*
Mercon Regulator Co.*
Minn-Honeywell Reg.Co.*
Morse Magnet Clock Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Penn Elects Switch Co.*
Refinery Supply Co.
Seth Thomas Clock Co.*
Spencer Thermostat Co.
Standard Elect. Time Co.*
States Co.*
Stromberg Electric Co.*
Struthers-Dunn, Inc.*
Summit Indus. Inst. Co.*
Tagliabue Mfg. Co., C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
U. S. Recording Co.*
Walser Auto. Timer Co.*
Waltham Watch Co.*
Western Electro-Mechanical Co., Inc.*
Zenith Electric Co.*

Time—Direct Current
Teletouch Corp.*

Unit Heater
American Askania Corp.*
American Inst. Co.*
Bender Warrick Corp.*
Consolidated Ashcroft Hancock Co., Inc.*
Brown Instrument Co.*
Detroit Lubricator Co.*
Edison, Inc., Thomas A.*
Friez & Sons, Inc., J. P.*
Fulton-Sylphon Co.*
Gordon Co., Claud S.
Jensen Instrument Co.
Johnson Service Co.*
Lawler Auto. Con., Inc.*
Leeds & Northrup Co.*
Marsh Corp., Jas. P.*
Mercoid Corp.*
Minn-Honeywell Reg.Co.*
Paragon Electric Co.
Penn Electric Switch Co.*
Sarco Company, Inc.*
Spencer Thermostat Co.*
Struthers-Dunn, Inc.*
Thermo Con. Dev., Inc.
Wilbin Instrument Corp.*

Vacuum—See Controls, Automatic-Pressure & Vacuum

Valve—Air Operated
Eclipse Fuel Eng. Co.*

Valve—Motor Operated
American Askania Corp.*
Automatic Products Co.*
Automatic Temp.Con.Co.*
Bailey Meter Co.*
Bristol Co.*
Brooke Eng. Co., Inc.*
Brown Instrument Co.*
Builders Iron Foundry*
Consolidated Ashcroft Hancock Co., Inc.*
Cook Electric Co.*
Cramer & Co., Inc., R.W.
Cutler-Hammer, Inc.*
Davis Regulator Co.*
Defender Auto. Reg. Co.*
Detroit Lubricator Co.*
Dickson Co.*
Foxboro Co.*
Friez & Sons, Inc., J. P.
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Jensen Instrument Co.
Klipfel Mfg. Co.*
Leeds & Northrup Co.*
Ward Leonard Elect. Co.*
Lewis Air Condit., Inc.*
Lewis Engineering Co.*
McAlear Mfg. Co.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Pittsburgh Equitable Meter Co.
Plouff Co.*
Refinery Supply Co.
R-S Products Corp.*
Shallcross Controls, Inc.*
Sheer Co., H. M.*
Tagliabue Mfg. Co., C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*
Wilbin Instrument Corp.*

Viscosity
Sterling Engine Co.*

Voltage A. C.
American Askania Corp.*
Bristol Co.*
Central Scientific Co.
Esterline-Angus Co.*
L.A.B. Corp.*
Leeds & Northrup Co.*
Ward Leonard Elect. Co.*
Roller-Smith*
Thermo Con. Dev., Inc.

Water Level—See Liquid Level

Weight
Atlantic Prec. Inst. Co.*

CONTROL SYSTEMS
Boiler Feed
Northern Equipment Co.*

CONTROL SYSTEMS
Combustion—See Controls, Automatic, Combustion

CONTROL SYSTEMS
Draft—See Controls, Automatic, Pressure & Vacuum

CONTROL SYSTEMS
Pressure—See Controls, Automatic, Pressure & Vacuum

CO-ORDINATOGRAPH
Kern Co.
Zeiss, Inc., Carl

COUNTERS
Hour
General Elec. Co.*
Product. Inst. Co.*
Standard Elec. Time Co.*
Veeder Root, Inc.*
Westinghouse E.&M.Co.*
Weston Elec. Inst. Corp.*

Production, Revolution, Stroke
Adde & Co.*
Automatic Electric Co.*
Bristol Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Central Scientific Co.
Crosby Steam Gage & Valve Co.*
Cummings Machine Wks.*
Curtin & Co., Inc., W. H.
Denver Fire Clay Co.
Durant Mfg. Co.*
Dwyer Mfg. Co., F. W.
Electric Tach. Corp.*
Electronic Products Co.*
Friez & Sons, Inc., J. P.*
Gaertner Scientific Corp.*
General Elec. Co.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hart Mfg. Co., R. E.*
Hasler Tel Co.*
H-B Inst. Co., Inc.*
Henschel&Co.,Inc.,C.J.*
Howe & French, Inc.
Marietta Apparatus Co.
Marsh Corp., Jas. P.*
McDonnell Odometer Co.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
Ohmer Fare Reg. Co.*
Pioneer Inst. Co., Inc.
Pitometer Log. Corp.*
Prod. Inst. Co.*
Redington Co., F. B.*
Richardson Scale Co.*
Standard Elec. Time Co.*
Star Brass Mfg. Co.*
Stover Lang Co.*
Stromberg Electric Co.
Struthers Dunn, Inc.*
Testing Machines, Inc.*
Veeder Root Inc.*
Waltham Watch Co.
Ward Leonard Elect. Co.*
Warren-Knight Co.
Western Scientific Co.
Weston Elect. Inst.Corp.*

Twist
Scott Co., Henry L.*

COURSE PROTRACTORS
See Protractors, Course

CRITICAL POINT MACHINES
See Also Dilatometers
Gordon Co., Claud S.
Illinois Testing Lab. Inc.*
Leeds & Northrup Co.*

CRYSTALS
Piezo Electric, Quartz, Tourmaline
Premier Crys. Lab., Inc.*

CUBIC FOOT BOTTLES
American Meter Co.*
Braun Corp.
Central Scientific Co.
Daigger & Co., A.
Fisher Scientific Co.
Greene Brothers, Inc.
Pitts. Equit. Met. Co.*
Precision Scientific Co.*
Refinery Supply Co.
Superior Meter Co., Inc.*
Wilkens-Anderson Co.

CURDOMETER
Heusser Inst. Mfg. Co.*

CURRENT LIMITERS
Landis & Gyr, Inc.*

CURRENT METER—
Stream Flow
Buff & Buff Mfg. Co.*
Central Scientific Co.
Gurley, W. & L. E.*
Leupold, Volpel & Co.*
Lundquist Tool & Mfg. Co.*
Warren-Knight Co.
Water Works Sup. Co.
White Co., Inc., David*

CURRENT ELECTRIC RECORDERS
Bristol Co.*
General Electric Co.*
Leeds & Northrup Co.*
Roller-Smith Co.*
Westinghouse E.&M. Co.*

CURRENT REGULATORS
Central Scientific Co.
Ward Leonard Elect. Co.*
Westinghouse E.&M. Co.*

CURVE TRACER
Leeds & Northrup Co.*

CUTMETERS
McDonnell Odometer Co.*

CYCLE CONTROLLERS
See Controllers, Automatic, Cycle

CYCLE COUNTERS
General Electric Co.*
Meter Devices Co.
Rawson Elect. Inst., Co.*
Standard Elect. Time Co.*
States Co.*
Veeder Root, Inc.*
Ward Leonard Elect. Co.*
Westinghouse E.&M. Co.*

CYCLOMETERS
McDonnell Odometer Co.*
Veeder Root, Inc.*

CYLINDERS— Graduated
See Glassware, Laboratory

DECIBEL METERS
Clough-Brengle Co.*
Weston Elect. Inst.Corp.*

DEFLECTION TESTERS
Light Wave
Van Keuren Co.*

DEFORMETER
Baldwin-Southwark Corp.

DELINEASCOPES
Aloe Co., A. S.
Braun Corp.
Central Scientific Co.
Daigger & Co.
Denver Fire Clay Co.
Fisher Scientific Co.
General Biol. Sup. House
Greene Brothers, Inc.
Leitz, Inc., E.*
Mine & Smelter Sup. Co.
New York Biol. Sup. Co.
Pfaltz & Bauer, Inc.
Spencer Lens Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.

DEMAND—Limiting Meters
General Electric Co.*

DEMAND METERS
Electric
Brown Instrument Co.*
Esterline-Angus Co.*
Landis & Gyr, Inc.
Lincoln Meter Co., Inc.*
General Electric Co.*
Minn-Honeywell Reg.Co.*
Sangamo Electric Co.*
Westinghouse E.&M. Co.*

Gas
American Meter Co.,Inc.*
Bailey Meter Co.
Pittsburgh Equitable Meter Co.*

DEMAND TOTALIZING RELAYS & DEVICES
General Electric Co.*

DENSIMETERS
Akatos, Inc.
Cambridge Inst. Co.,Inc.*
Gaertner Scientific Corp.*
Greiner Co., Emil
Mine Safety Appl. Co.*
Permutit Co.*
Prec. Ther. & Inst. Co.*
Schultheis Corp., E. W.*
Sci. Glass Mfg. Co.*
Tagliabue Mfg. Co., C.J.*
Testing Machines, Inc.*
Western Scientific Co.
Williams Apparatus Co.*

DENSOMETERS
Gurley, W. & L. E.*

DETECTORS— Mine Gases
Bullard Co., E. D.
Koch & Co., Paul W.*
Mine Safety Appl. Co.*
Parks, Jr., Harry S.*
Teltru Instrument Co.

DETERMINATORS MOISTURE
See Moisture Testing Apparatus

DIAL INDICATORS
See Gages, Dial

DIAL MICROMETER
See Gages, Dial

DIFFRACTION GRATING
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Eimer & Amend
Fuess, Inc., R.
Marietta Apparatus Co.
Schaar & Co.
Welch Mfg. Co., W. M.
Western Scientific Co.

DILATOMETER
Central Scientific Co.*
Dietert Co., Harry W.*
Ferner Co., R. Y.*
General Electric Co.*
Leitz, Inc., E.*
Macalaster Bicknell Co.*
Pacific Scientific Co.
Rockwell Co., Stanley P.*

DIVIDERS
Union Tool Co.*

DIVIDING HEAD—Optical
Bausch & Lomb Opt. Co.*
Gaertner Scientific Corp.*
Scherr Co., George*
Western Scientific Co.

DIVIDING MACHINE
Ferner Co., R. Y.
Gaertner Scientific Corp.*
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.

DRAFT GAGES
See Gages, Draft

DRAWING INSTRUMENTS
Alteneder & Sons, Theo.*

DRIFTMETER
Driftmeter, Inc.*

DUROMETERS
Braun Corp.
Eimer & Amend
Steel City Testing Lab.

DUST ANALYSIS APPARATUS
Braun Corp.
Chicago Apparatus Co.
Eimer & Amend*
Fisher Scientific Co.*
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greiner Co., Inc., O. R.*
Macalaster Bicknell Co.*
McDonnell Odometer Co.*

DUST ANALYSIS APPARATUS (Cont'd)
Mine Safety Appl. Co.*
N. Y. Lab. Sup. Co., Inc.
Precision Scientific Co.*
Schaar & Co.
Teltru Instrument Co.*
Western Scientific Co.
Wilkens-Anderson Co.

DUST SAMPLERS
Wallace Tiernan Co.,Inc.*

DYNAMOMETERS
Parks, Jr., Harry S.*
Toledo Scale Co.*

Froude Type
Torque Products Co.*

Hydraulic
Riehle Test. Mach. Div.*

Pull Rod
Martin Decker Co.*

Recording Pump
Martin-Decker Co.*

Rotary Absorption
Commercial Eng. Labs.
General Electric Co.*
Olsen Testing Machine Co., Tinius*
Torque Products Co.*

Tension
Chatillon & Sons, John*
Chicago Apparatus Co.
Eimer & Amend
Martin Decker Corp.*
Olsen Testing Machine Co., Tinius*
Seederer-Kohlbusch, Inc.*
Torque Products Co.*

Transmission
General Electric Co.*
Olsen Testing Machine Co., Tinius*
Torque Products Co.*

EARTH CURRENT METERS
Chicago Apparatus Co.
Leeds & Northrup Co.*
Rawson Elect. Inst. Co.*
Roller-Smith Co.*

EARTH RESISTANCE METERS
Biddle Co., Jas. G.
Borden Electric Co.*
Gray Inst. Co.*
Sensitive Res. Inst. Co.*
Sticht & Co., HermonH.*

EBULISCOPE
Aloe Co., A. S.
Braun Corp.*
Central Scientific Co.
Chicago Apparatus Co.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend*
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.
Kauffman Latimer Co.
Tagliabue Mfg. Co., C.J.*
Western Scientific Co.

ECHELON GRATING
Gaertner Scientific Corp.*

ELECTRIC TELEMETER
See Telemeter, Electric

ELECTRIC WAVE FILTER SECTIONS
Couch Co., Inc., S. H.*
Ferranti Electric, Inc.*
General Radio Co.*
International Broadcasting Equip. Co.*

ELECTROMETERS
Cambridge Inst. Co.,Inc.*
Central Scientific Co.*
Eimer & Amend
Rubicon Co.*
Sensitive Res. Inst. Co.*
Victoreen Instrument Co.*
Welch Mfg. Co., W. M.*
Western Elect. Co., Inc.*
Western Scientific Co.

Quadrant
Precise Inst. Co., Inc.*

String
Victoreen Inst. Co.*

ELECTRONIC METERS
See Meters, Electronic

ELECTROPLATING SOLUTION TESTING APPARATUS
LaMotte Chem. Prod.Co.*

ELECTROSCOPES
Central Scientific Co.*
Denver Fire Clay Co.*
Eimer & Amend
Mine & Smelter Sup. Co.
Victoreen Instrument Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.

ELLIPSOGRAPH
Warren Knight Co.

END MEASURES
Pratt & Whitney Co.*

ENGINE INDICATORS
Aeromarine Inst. Co.*
American Instrument Co.*
Bacharach Ind. Inst. Co.*
Baldwin-Southwark Corp.*
Commercial Eng. Labs.*
Consolidated Ashcroft Hancock Co., Inc.*
Crosby Steam Gage & Valve Co.*
Cummings Mach. Wks.*
Curtin & Co., Inc., W. H.
General Inst. & Con. Co.
Greene Brothers, Inc.
Holzapfel Instrument Co.*
Kollsman Inst. Co.,Inc.*
Lewis Engineering Co.*
Robertson, Jas. L., 3rd*
Pioneer Inst. Co., Inc.*
Trill Indicator Co.*

ENGINE INDICATOR REDUCING MOTION
Robertson, Jas. L., 3rd*

EUDIOMETERS
Laertzing Glass Inst. Co.*

EUSCOPE
Bausch & Lomb Opt. Co.*

EXPANSION TEST APPARATUS
Eimer & Amend*

EXTENSOMETERS
American Instrument Co.*
Baldwin-Southwark Corp.*
Cambridge Inst. Co.,Inc.*
Eitzen Co., Louis C.*
Ferner Co., R. Y.
Olsen Testing Machine Co., Tinius*
Steel City Testing Lab.*
Testing Machines, Inc.*

FAULT FINDERS
Cambridge Inst. Co.,Inc.*
Century Electrical Co.*
Fish Schurman Corp.*
Gray Instrument Co.*
Kellogg Switchboard & Supply Co.
Leeds & Northrup Co.*
Rawson Elect. Inst. Co.*
Roller Smith Co.*
Rubicon Co.*
Tobe Deutschmann Corp.*
Western Scientific Co.
Weston Elect. Inst.Corp.*

FEED WATER TESTING APPARATUS
See Tester, Feed Water

FIELD RHEOSTATS
See Rheostats

FILLING MACHINES
Automatic
Empire Lab. Sup.Co.,Inc.
Sci. Glass App. Co.*
Toledo Scale Co.*

Bag
Exact Weight Scale Co.*
Toledo Scale Co.*

Bottle
Alsop Engineering Co.*
Empire Lab.Sup.Co.,Inc.*

Can
Alsop Engineering Co.
Exact Weight Scale Co.*

Capsule
Greiner Co., Inc., O. R.*

Carton
Exact Weight Scale Co.*
Toledo Scale Co.*

FILTERS
Light
Bryden Co.*

FIRING DISCS
Veritas Firing Sys. Co.*

FLASHERS
Neon Tube
Burgess Labs., Inc. C.F.*

FLASH POINT TESTERS
Abel's
American Instrument Co.*
Central Scientific Co.
Curtin & Co., Inc., W.H.
Daigger & Co., A.
Empire Lab. Sup.Co.,Inc.
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.
Hiergesell & Sons, Wm.
Kauffman-Lattimer Co.
Laboratory Materials Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Schaar & Co.
Stand. Scien. Sup. Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Abel-Pensky's
American Inst. Co.*
Braun Corp.
Central Scientific Co.
Curtin & Co.,Inc.,W.H.
Daigger & Co., A.
Empire Lab. Sup.Co.,Inc.
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.
Kauffman-Lattimer Co.
Laboratory Materials Co.
N.Y. Lab. Sup. Co.,Inc.
Palo-Myers, Inc.
Schaar & Co.
Stan. Scien. Supply Corp.
Teschner-Quinn Corp.
Walker & Co. Inc. G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Cleveland Open Cup
Aloe Co., A. S.
American Inst. Co.*
Boekel & Co., Inc.,Wm.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.*
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.
Howe & French, Inc.
Humboldt Mfg. Co.*

FLASH POINT TESTERS
Cleveland Open Cup (Cont'd)
Kauffman-Lattimer Co.
Laboratory Materials Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc
Precision Scientific Co.*
Rascher & Betzold*
Refinery Supply Co.
Schaar & Co
Stan. Scien. Sup. Corp.
Tagliabue Mfg. Co.,C.J.*
Teschner-Quinn Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Elliott Closed Cup
American Inst. Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.*
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.
Humboldt Mfg. Co.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co.,Inc
Palo-Myers, Inc.
Precision Scientific Co.*
Rascher & Betzold
Refinery Supply Co.
Schaar & Co.
Stan. Scien. Sup. Corp.
Tagliabue Mfg. Co.,C.J.*
Teschner-Quinn Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co
Gray's
Central Scientific Co.
Empire Lab. Sup.Co.,Inc.
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Inc., O. R.*
Hiergesell & Sons, Wm.
Kauffman-Lattimer Co.
Palo-Myers, Inc.
Stan. Scien. Sup. Corp.
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Western Scientific Co
Pensky-Marten's
American Inst. Co.*
Boekel & Co., Inc.,Wm.*
Braun Corp.
Central Scientific Co.
Curtin & Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co*
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil*
Griebel Inst. Co., Inc.
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co.,Inc
Palo-Myers, Inc.
Precision Scientific Co.*
Rascher & Betzold
Refinery Supply Co.
Schaar & Co.
Stan. Scien. Sup. Corp.
Tagliabue Mfg. Co.,C.J.*
Teschner-Quinn Corp.
Walker & Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Tag—Closed
Tagliabue Mfg. Co.,C.J.

FLATNESS TESTERS
Light Wave
Van Keuren Co.*

FLOW METERS
Air
American Gas Fur. Co.*
Amer. Meter Co., Inc.*
BacharachIndInst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Braun Corp.
Brown Inst. Co.*
Bristol Co.*
Builders Iron Foundry
Clark Blast Met.Co.,C.J.*
Cochrane Corp.*
Commercial Eng. Labs.*
Curtin & Co.,Inc.,W.H.
Cutler-Hammer, Inc.*
Defender Auto. Reg.Co.*
Denver Fire Clay Co.
Elgin Softener Corp.*
Fish-Schurman Corp.*
Foxboro Co.*
Friez & Sons,Inc.,J.P.*
Fuess, Inc., R.
Gen. Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
Jensen Inst. Co.
Meriam Co.*

FLOW METERS
Air (Cont'd)
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
New Jersey Meter Co.*
N.Y. Lab. Sup. Co.,Inc.
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting Co*
Tagliabue Mfg. Co.,C.J.*
Taylor Instruments Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Wilkens-Anderson Co.
Gas
American Gas Fur. Co.*
American Meter Co.*
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Cochrane Corp.*
Curtin&Co.,Inc.,W.H.
Cutler-Hammer, Inc.*
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Elgin Softener Corp.*
Fish-Schurman Corp.*
Foxboro Co.*
Gen. Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Hays Corp.*
Hoke, Inc.*
Jensen Instrument Co.
Meriam Co.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting Co.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Western Scientific Co.
Wilkens-Anderson Co.
Indicating
Aeromarine Inst.Co.,Inc*
American Gas Fur. Co.*
American Met. Co., Inc.*
BacharachIndInst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Comm. Eng. Labs.*
Defender Auto. Reg.Co.*
Denver Fire Clay Co.
Elgin Softener Corp.*
Fish-Schurman Corp.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
General Inst. & Con. Co.
Greene Brothers, Inc.
International Filter Co.*
Jensen Instrument Co.
McNeill Eng. Eqip. Co., T. W.
Meriam Co.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
New Jersey Meter Co.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.*
Republic Flow Met. Co.*
Schutte & Koerting*
Sci. Glass App. Co.*
Speedway Mfg. Co.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instruments Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Western Scientific Co.
Indicating & Recording
American Met. Co., Inc.*
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Braun Corp.
Brown Instrument Co.*
Bristol Co.*
Builders Iron Foundry*
Cochrane Corp.*
Curtin & Co.,Inc.,W.H.
Cutler-Hammer, Inc.*
Defender Auto. Reg.Co.*
Denver Fire Clay Co.
Elgin Softener Corp.*
Foxboro Co.*
Friez & Sons, Inc.,J.P.*
General Inst. & Con. Co.
Greene Brothers, Inc.
International Filter Co.*
Leeds & Northrup Co.*
McNeill Eng. Equip. Co., T. W.
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Neptune Meter Co.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.

FLOW METERS (Cont'd)
Integrating & Recording
American Met. Co.,Inc.*
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Curtin & Co.,Inc.,W.H.
Defender Auto. Reg.Co.*
Denver Fire Clay Co.
Elgin Softener Corp.*
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
International Filter Co.*
Leeds & Northrup Co.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting*
Tagliabue Mfg. Co.,C.J.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Liquids
Amer. Liquid Meter Co.*
American Met. Co., Inc.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bowser & Co.,Inc.,S.F.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Buffalo Meter Co.*
Builders Iron Foundry*
Cochrane Corp.*
Comm. Eng. Labs.*
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.
D'Este Co., Julian*
Elgin Softener Corp.*
Foxboro Co.*
General Inst. & Con.Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Hersey Mfg. Co.*
International Filter Co.*
Jensen Instrument Co.
Leeds & Northrup Co.*
McNeill Eng. Equip. Co., T. W.*
Meriam Co.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
National Meter Co.*
Neptune Meter Co.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Pitts. Equit. Meter Co.*
Plouff Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting Co.*
Simplex V. & Met. Co.*
Smith Mfg. Co., A. P.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
U. S. Gauge Co.*
Union Water Meter Co.*
Wallace&TiernanProd.*
Water Wks. Supply Co.
Weston Elec. Inst.Corp.*
Yarnall-Waring Co.*
Open Stream
American Meter Co.*
Bailey Meter Co.*
Builders Iron Fdry.*
Cochrane Corp.*
Elgin Softener Corp.*
Foxboro Co.*
Gurley, W. & L. E.*
Morey & Jones, Ltd.*
Scientific Inst. Co.*
Orifice
American Met. Co., Inc.*
Curtin & Co.,Inc.,W.H.
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Braun Corp.
Brown Instrument Co.*
Bristol Co.*
Builders Iron Foundry*
Cochrane Corp.*
Curtin & Co.,Inc.,W.H.
Defender Auto. Reg.Co.*
Denver Fire Clay Co.
Eimer & Amend*
Elgin Softener Corp.*
Foxboro Co.*
General Inst. & Con.Co.
Greene Brothers, Inc.
Jensen Instrument Co.
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Refinery Supply Co.
Republic Flow Met. Co.*
Tagliabue Mfg. Co.,C.J.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Pitot Tube
American Meter Co.*
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Brown Instrument Co.*
Central Scientific Co.*
Cochrane Corp.
Curtin & Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Fish-Schurman Corp.*
Friez & Sons,Inc.,J.P.*
Fuess, Inc., R.*

FLOW METERS
Pilot Tube (Cont'd)
General Inst. & Con. Co.
Greene Brothers, Inc.
Jensen Instrument Co.
Minn-Honeywell Reg.Co
Morey & Jones, Ltd.*
Pacific Scientific Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Teltru Instrument Co.*
Themo Con. Dev., Inc.
Water Wks. Supply Co.
Steam
American Met. Co., Inc.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.
Foxboro Co.*
General Inst. & Con. Co.
Jensen Instrument Co.
Meriam Co.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Plouff Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Tagliabue Mfg. Co.,C.J.*
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Venturi
Bailey Meter Co.*
Binckley, Geo. Sydney*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
General Inst. & Con.Co
Greiner Co., Inc., O. R.*
International Filter Co.*
Milwaukee Glass Wks., Inc.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
N.Y. Lab. Sup. Co.,Inc
Pacific Scientific Co.
Refinery Supply Co.
Thermo Con. Dev., Inc.
Water Wks. Supply Co
V-Notch
Bailey Meter Co.*
Cochrane Corp.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Thermo Con. Dev., Inc.
Water Wks. Supply Co.

FLOW TABLES
Humboldt Mfg. Co.*

FLUE GAS ANALYZERS
See Gas Analytical Meters, Carbon Dioxide

FLUORESCENT MERCURY VAPOR TUBES EMITTING WHITE LIGHT
General Physical Lab.*

FLUXMETERS
Cambridge Inst.Co.,Inc.*
Clough-Brengle Co.*
General Electric Co.*
Leeds & Northrup Co.*
Rawson Elect. Inst. Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*

FOLDING ENDURANCE TESTERS
See Testers, Folding Endurance

FOOT CANDLE METERS
See Meter, Foot Candle

FOREWARN DETECTOR, for locating hidden weapons
Koch & Co., Paul W.*

FOUCAULT PENDULUM
Eastern Science Sup.Co.*

FRACTIONAL HORSE-POWER MOTORS
Bodine Electric Co.
Holtzer-Cabot Elec. Co.*

FREENESS TESTERS
See Testers, Freeness

FREQUENCY METERS
Controlling
Bristol Co.*
Esterline-Angus Co.*
General Electric Co.*
Leeds & Northrup Co.*
Watts Elec. Con. Inc.*
Indicating
Biddle Co., James G.
Bristol Co.*
Byram, H. F.
Cambridge Inst. Co.,Inc.*
Chicago Apparatus Co.
Clough-Brengle Co.*
Leeds & Northrup Co.*
Kellogg Switchboard & Supply Co.
Inter. Broad. Equip. Co.*
General Electric Co.*
Ferranti Electric, Inc.*
Elect. Inst. & Eng.Co., Inc.*
Roller-Smith Co.*
Standard Elect. Time Co.
Western Elec. Co.,Inc*
Weston Elec. Inst.Corp.*
Recording
Bristol Co.*
Esterline-Angus Co.*
General Electric Co.*
Leeds & Northrup Co.*
Standards
General Radio Co.*
Vibrating Reed
Biddle Co., James G.

FRITTED GLASS FILTERS & APPARATUS
Fish-Schurman Corp.*

FUEL ANALYSIS APPARATUS
Aloe Co., A. S.
American Inst. Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Fisher Scientific Co.*
Fish-Schurman Corp.*
Engelhard, Inc., Chas.*
Gilmore Drug Co.,W.J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Heil Chem. Co., Henry
Kauffman-Latimer Co.
Laboratory Materials Co.
Mine & Smelter Sup. Co.
Palo-Myers, Inc.
Parr Inst. Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Precision Scientific Co.*
Rascher & Betzold
Refinery Supply Co.
Republic Flow Met. Co.*
Schaar & Co.
Teschner-Quinn Corp.
Walker & Co.,Inc.,G.T.
Wilkens-Anderson Co.

FUEL FLOW INDICATOR
See Indicator, Fuel Flow

GAGE BLOCKS
Ferner Co., R. Y.
Ford Motor Co.*
Pratt & Whitney Co.*
Van Keuren Co.*

GAGES
Absolute Pressure
Aeromarine Inst.Co.,Inc.*
Bailey Meter Co.*
Baldwin-Southwark Corp.
Binckley, Geo. Sydney*
Bristol Co.*
Brown Inst. Co.*
Central Scientific Co.*
Con. Ashcroft Hancock Co., Inc.*
Curtin & Co.,Inc.,W.H.
Defender Auto. Reg.Co.*
Foxboro Co.*
General Inst. & Con.Co.
Greene Brothers, Inc.
Jensen Inst. Co.
Kollsman Inst. Co., Inc.*
Lonergan Co., J. E.*
Minn-Honeywell Reg.Co.*
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Plouff Co.*
Pre. Ther. & Inst. Co.*
Refinery Supply Co.
Scientific Inst. Co.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
Thermo Con. Dev., Inc.
Uehling Inst. Co.*
U. S. Gauge Co.*
Walker & Co.,Inc.,G.T.
Abulator
Clardon Corp.*
Air
Aeromarine Inst.Co.,Inc.*
American Met. Co., Inc.*
Bristol Co.*
Brown Inst. Co.*
Chicago Apparatus Co.
Con. Ashcroft Hancock Co., Inc.*
Crosby Steam G.&V.Co.*
Curtin & Co.,Inc.,W.H.
Fisher Scientific Co.
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
H-B Inst. Co., Inc.
Johnson Service Co.
Kauffman-Lattimer Co.
Kollsman Inst. Co., Inc.*
Marsh Corp., Jas. P.*
Minn-Honeywell Reg.Co.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Plouff, Co.*
Refinery Supply Co.
Rochester Mfg. Co.,Inc.*
Sargent & Co., E. H.
Star Brass Mfg. Co.*
Stewart Warner Corp.*
Teltru Inst. Co.*
U. S. Gauge Co.*
Western Scientific Co.
Alarm
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Crosby Steam G.&V.Co.*
Curtin & Co.,Inc.,W.H.
Friez & Sons, Inc.,J.P.*
General Inst. & Con. Co.
Greene Brothers, Inc.
H-B Inst. Co., Inc.
Marsh Corp., Jas. P.*
McNeill Eng. Equip. Co., T. W.
Mercoid Corp.*
Minn-Honeywell Reg.Co.*
Parks, Jr., Harry S.*
Plouff Co.*
Star Brass Mfg. Co.*
Taylor Instrument Cos.*
U. S. Gauge Co.*
Amplifying
Bailey Meter Co.*
Eitzen Co., Louis S.
Miles Reprod. Co.,Inc.*
Precision G. & T. Co.*
Scherr Co., George*
Bourdon
American Met. Co., Inc.*
Bailey Meter Co.*
Baldwin-Southwark Corp.
Binckley, Geo. Sydney*
Bristol Co.*
Chicago Apparatus Co.

GAGES
Bourdon (Cont'd)
Con. Ashcroft Hancock Co., Inc.*
Crosby Steam G.&V.Co.*
Curtin & Co.,Inc.,W.H.
Dickson Co.*
Friez & Sons, Inc.,J.P.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
Hoke, Inc.*
Lonergan Co., J. E.*
Marsh Corp., Jas. P.*
Martin-Decker Corp.*
Mercoid Corp.*
Pacific Scientific Co.
Plouff Co.*
Refinery Supply Co.
Star Brass Mfg. Co.*
Stewart Warner Corp.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instrument Cos.*
U. S. Gauge Co.*
Cementing
Martin-Decker Co.*
Center
Lufkin Rule Co.*
Comparator
Ames Co., B. C.*
Coats Mach. T.Co.Inc.*
Comtor Co.*
Eitzen Co., Louis C.
Federal Products Corp.*
Gaertner Scien. Corp.*
Jones & Lamson M. Co.*
Pratt & Whitney Co.*
Precision G. & T. Co.*
Scherr Co., George*
Van Keuren Co.*
Zeiss, Inc., Carl
Compression
Comm. Eng. Labs.*
Cylinder
Ames Co., B. C.*
Comm. Eng. Labs.*
Eitzen Co., Louis C.
Federal Products Corp.*
Fish-Schurman Corp.*
Greene Brothers, Inc.
Lewis Engineering Co.*
Lufkin Rule Co.*
N. J. Lab. Supply Co.
Pratt & Whitney Co.*
Sargent & Co., E. H.
Scherr Co., George*
Starrett Co., L. S.*
Van Keuren Co.*
West & Dodge Thread Gauge Co., Inc.*
Dead Beat
Bristol Co.*
Depth
Ames Co., B. C.*
Bristol Co.*
Con. Ashcroft Hancock Co., Inc.*
CrosbySteamG.&V.Co.*
Curtin&Co.,Inc.,W.H.
Eitzen Co., Louis C.
Federal Products Corp.*
GeneralInst.&Cont.Co.
Greene Brothers, Inc.
International Filter Co.*
Johnston&JenningsCo.*
King-Seeley Corp.*
Lufkin Rule Co.*
Millers Falls Co.*
Reed Small Tool Wks.*
Refinery Supply Co.
Scherr Co., George*
Simplex V. & M. Co.*
Star Brass Mfg. Co.*
Starrett Co., L. S.*
Testing Machines, Inc.*
Union Tool Co.*
Walker&Co.,Inc.Geo.T.
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.
West & Dodge Thread Gauge Co., Inc.*
Zeiss, Inc., Carl
Depth, Navigational
Hand&Sons,Co.,JohnE.
Dial
Ames Co., B. C.*
Amthor Testing Inst. Co. Inc.
Bailey Meter Co.*
Baldwin-Southwark Corp.
Bristol Co.*
Chicago Apparatus Co.
Comtor Co.
Curtin&Co.,Inc.,W.H.
DefenderAuto.Reg.Co.*
Dickson Co.*
Eitzen Co., Louis C.
Federal Products Corp.*
Foxboro Co.*
GeneralInst.&Con.Co.
Greene Brothers, Inc.
H-B Instrument Co., Inc.
Lowe, H. A.*
Marsh Corp., Jas. P.*
Plouff Co.*
Refinery Supply Co.
Starrett Co., L. S.*
Testing Machines, Inc.*
Taylor Instrument Cos.*
U. S. Gauge Co.*
Waltham Dial Gage Co.*
Water Wks. Supply Co.
Western Scientific Co.
Zeiss, Inc., Carl
Differential Pressure
AmericanMeterCo.,Inc.*
Amthor Testing Inst. Co. Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Con. Ashcroft Hancock Co., Inc.*
Crescent Eng. Co.*
CrosbySteamG.&V.Co.*
Curtin&Co.,Inc.,W.H.
DefenderAuto.Reg.Co.*
Fisher Scientific Co.

GAGES
Differential Pressure
(Cont'd)
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.*
General Inst.&Con.Co.
Greene Brothers, Inc.
Hays Corp.*
International Filter Co.*
Jensen Instrument Co.
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Pitts Equit Meter Co.*
Plouff Co.*
PrecisionTher.&InstCo.*
Refinery Supply Co.
RepublicFlowMetersCo.*
Scientific Instrument Co.*
Star Brass Mfg. Co.*
Taylor Instrument Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
U. S. Gauge Co.*

Draft
Amthor Testing Inst. Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Central Scientific Co.
Con. Ashcraft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Defender Auto. Con. Co.*
Denver Fire Clay Co.
Dwyer Mfg. Co., F.W.*
Eimer & Amend
Amthor Testing Inst. Co. Inc.
Bailey Meter Co.*
Baldwin-Southwark Corp.
Ellison Draft Gage Co.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
GeneralInst.&Con.Con.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Hays Corp.*
Jensen Instrument Co.
McNeill Eng. Equip. Co. T. W.
Meriam Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
Pacific Scientific Co.
Parks, Jr., Harry S.*
Plouff Co.*
Precision Scientific Co.*
PrecisionTher&Inst.Co.*
Refinery Supply Co.
RepublicFlowMetersCo.*
Scientific Inst. Co.*
Taylor Instrument Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
Uehling Instrument Co.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Western Scientific Co.
Wilkens-Anderson Co.

Drill Grinding
Bausch&LombOpt.Co.*
Con. Ashcroft Hancock Co., Inc.*
Lufkin Rule Co.*

Feeler
Lufkin Rule Co.*

Flow
American Met. Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Defender Auto. Reg. Co.*
Fuess, Inc., R.
General Inst. & Con. Co.
Greene Brothers, Inc.
Hays Corp.*
Hoke, Inc.*
International Filter Co.*
Jensen Instrument Co.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
Simplex V. & M. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
United States Gauge Co.*
Wallace Tiernan Prod., Inc.*
Water Wks. Supply Co.

Gas
American Meter Co.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Connelly I. S. & G. Co.*
Crosby S. G. & V. Co.*
Fisher Scientific Co.
Fuess, Inc., R.
General Inst. & Con. Co.
Greene Brothers, Inc.
Hays Corp.*
Huddleston, J. S. F.*
King-Seeley Corp.*
Macalaster Bicknell Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.*
Parks, Jr., Harry S.*
Pitts. Equit. Meter Co.*
Precision Scientific Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Superior Meter Co., Inc.*
Teltru Instrument Co.*

GAGES
Gas (Cont'd)
United States Gauge Co.*
Wallace & Tiernan Prod., Inc.*

Grinding
Federal Products Corp.*

Height
Lufkin Rule Co.*

Hydrostatic
Bristol Co.*
Crosby S. G. & V. Co.*
Curtin & Co., Inc., W. H.
Greene Brothers, Inc.
Hydraulic Press Mfg. Co.
King-Seeley Corp.*
Kollsman Inst. Co., Inc.*
Liquidometer Corp.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.*
Plouff Co.*
Prec. Ther. & Inst. Co.*
Star Brass Mfg. Co.*
United States Gauge Co.*
Wallace & Tiernan Prod., Inc.*

Lens Thickness
Bausch & Lomb Opt.Co.*

Limit
Ferner Co., R. Y.

Liquid Level
American Met. Co., Inc.*
Bailey Meter Co.*
Binckley, George Sydney*
Boston Auto Gage Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Burt Scien. Labs., R. C.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Detroit Lubricator Co.*
Dickson Co.*
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.
General Inst. & Con. Co.
Greene Brothers, Inc.
Gurley, W. & L. E.*
International Filter Co.*
Jensen Instrument Co.
Johnston & Jennings Co.*
King-Seeley Corp.
Klingerit, Inc.*
Liquidometer Corp.*
Lonergan Co., J. E.*
McNeill Eng. Equip. Co., T. W.*
Meriam Co.*
Milwaukee Glass Works, Inc.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Nathan Mfg. Co.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Petrometer Corp.*
Pioneer Inst. Co., Inc.*
Pitts. Equit. Meter Co.*
Plouff Co.*
Pneumercator Co., Inc.*
Refinery Supply Co.
Republic Flow Meters Co.*
Rochester Mfg. Co., Inc.*
Stewart Warner Corp.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Co.*
Uehling Instrument Co.*
United States Gauge Co.*
Vapor Recovery Sys. Co.*
Walker & Co., Inc., G. T.
Wallace & Tiernan Prod., Inc.*
Water Works Supply Co.

Loss of Head
Bristol Co.*
Foxboro Co.*
Greene Brothers, Inc.
International Filter Co.*
Jensen Instrument Co.
King-Seeley Corp.*
Morey & Jones, Ltd.*
Parks, Jr., Harry S.*
Permutit Co.
Republic Flow Met. Co.*
Simplex V. & M. Co.*
Wallace & Tiernan Prod., Inc.*
Water Works Supply Co.

Mercury
American Met. Co., Inc.*
Amthor Testing Inst. Co., Inc.*
Bacharach Ind. Inst. Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Central Scientific Co.*
Chicago Apparatus Co.
Consolidated Ashcroft Hancock Co., Inc.*
Crosby St. G. & V. Co.*
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Dwyer Mfg., F. W.*
Eimer & Amend
Fisher Scientific Co.
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
Hays Corp.*
H-B Inst. Co., Inc.*
International Filter Co.*
Jensen Instrument Co.
Kauffman-Lattimer Co.
King-Seeley Corp.*
Macalaster Bicknell Co.*
Meriam Co.*
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Morey & Jones, Ltd.*
National Gauge Corp.*
N. J. Lab. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Pacific Scientific Co.
Parks, Jr., Harry S.*

GAGES
Mercury (Cont'd)
Pitts. Equit. Meter Co.*
Plouff Co.*
Podbielniak Ind. Res. Eng. Labs.*
Prec. Ther. & Inst. Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Scientific Instrument Co.*
Steele, Erick F.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
Uehling Instrument Co.*
Walker & Co., Inc., G. T.
Water Works Supply Co.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.

Micrometer
Amthor Testing Inst. Co., Inc.*
Braun Corp.
Chicago Apparatus Co.
Consolidated Ashcroft Hancock Co., Inc.*
Eitzen Co., Louis C.
Greene Brothers, Inc.
Haines Gauge Co.*
Lufkin Rule Co.*
Magnetic Gauge Co.*
Martin-Decker Corp.*
Millers Falls Co.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Pratt & Whitney Co.*
Prec. Ther. & Inst. Co.*
Sargent & Co., E. H.
Scheer Co., George*
Starrett Co., L. S.*
Taylor Instrument Cos.*
Testing Machines, Inc.*
Van Keuren Co.*
Walker & Co., Inc., G. T.*
Western Scientific Co.
Zeiss, Inc. Carl

Oil
Boston Auto Gage Co.*
Bristol Co.*
Connecticut Tel. & Elec. Corp.*
Consolidated Ashcroft. Hancock Co., Inc.*
Crosby S. G. & V. Co.*
Friez & Sons, Inc., J. P.*
Greene Brothers, Inc.
Johnston & Jennings Co.*
King-Seeley Corp.*
Liquidometer Corp.*
Lonergan Co., J. E.*
Marsh Corp., Jas. P.*
Nathan Mfg. Co.*
National Airoil Bur. Co.*
Parks, Jr., Harry S.*
Petrometer Corp.*
Pioneer Inst. Co., Inc.*
Plouff Co.*
Precision Scientific Co.*
Refinery Supply Co.
Rochester Mfg. Co., Inc.*
Sargent & Co., E. H.
Stewart Warner Corp.*
United States Gauge Co.*
Walker & Co., Inc., G. T.

Paint Film
Munsell Color Co., Inc.*

Paper Thickness
Ames Co., B. C.*
Amthor Test. Inst. Co., Inc.
Braun Corp.
Comtor Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Eitzen Co., Louis C.
Federal Products Corp.*
N. J. Lab. Supply Co.
Pacific Scientific Co.
Prec. Ther. & Inst. Co.*
Sargent & Co., E. H.
Starrett Co., L. S.*
Testing Machines, Inc.*
Thermo Con. Dev., Inc.
Thwing Instrument Co.*
Western Scientific Co.

Pitch Diameter
Federal Products Corp.*
Jones & Lamson Mach. Co.*
Lufkin Rule Co.*
Pratt & Whitney Co.*
Scherr Co., George*
Starrett Co., L. S.*
Union Tool Co.*
Van Keuren Co.*
Western Scientific Co.
West & Dodge Thread Gauge Co., Inc.*

Plug
Comtor Co.
Eitzen Co., Louis C.
Pratt & Whitney Co.*
Precision G. & T. Co.*
Scheer Co., George*
Scheffield Gage Corp.*
Van Keuren Co.*
West & Dodge Thread Gauge Co., Inc.*

Pneumatic Tank
Parks, Jr., Harry S.*
Plouff Co.*
Pneumercator Co., Inc.*

Precision Measuring
Comtor Co.*

Pressure
American Gas Fur. Co.
American Meter Co.*
Bailey Meter Co.*
Baldwin-Southwark Corp.
Bastian Blessing Co.
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Central Scientific Co.*
Chicago Apparatus Co.
Clark Blast Meter Co., Chas. J.*
Consolidated Ashcroft Hancock Co., Inc.*
Crosby S. G. & V. Co.*
Curtin & Co., Inc., W. H.

GAGES
Pressure (Cont'd)
Defender Auto. Reg. Co.*
Dickson Co.*
Eimer & Amend
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Gordon Co., Claud S.
Hays Corp.*
H-B Inst. Co., Inc.
Heise Bourdon Tube
Hoke, Inc.*
Labs.*
Hydraulic Press Mfg. Co.
Kauffman-Lattimer Co.
King-Seeley Corp.*
Kollsman Inst. Co., Inc.*
Lonergan Co., J. E.*
Macalaster Bicknell Co.*
Marsh Corp., Jas. P.*
Mercoid Corp.*
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
National Gauge Corp.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.
Pitts. Equit. Meter Co.*
Plouff Co.*
Pneumercater Co., Inc.*
Prec. Ther. & Inst. Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Rochester Mfg. Co., Inc.*
Star Brass Mfg. Co.*
Superior Meter Co., Inc.*
Taylor Instrument Cos.*
United States Gauge Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.

Pressure-Temperature
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Crosby S. G. & V. Co.*
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Dickson Co.*
Draper Mfg. Co.*
Foxboro Co.*
Fuess, Inc., R.*
Gamewell Co.
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
H-B Inst. Co., Inc.
Hoke, Inc.*
King-Seeley Corp.*
Kollsman Inst. Co., Inc.*
Lonergan Co., J. E.*
Marsh Corp., Jas. P.*
Mercoid Corp.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Plouff Co.*
Refinery Supply Co.
Stewart Warner Corp.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
United States Gauge Co.*
Prec. Gage & Tool Co.
Walker & Co., Inc., G. T.

Pressure, Tire
Lundquist T. & M. Co.*

Pressure & Vacuum
American Met. Co., Inc.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Crosby S. G. & V. Co.*
Curtin & Co., Inc., W. H.
Dickson Co.*
Eimer & Amend
Fisher Scientific Co.
Foxboro Co.*
Fuess, Inc., R.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Hays Corp.*
H-B Inst. Co., Inc.
Hoffman Spec. Co., Inc.*
Hoke, Inc.*
Kauffman-Lattimer Co.
Lonergan Co., J. E.*
Lonergan Co., J. E.*
Macalaster Bicknell Co.
Marsh Corp., Jas. P.*
Mercoid Corp.*
Minn-HoneywellReg.Co.*
National Gauge Corp.*
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.
Pitts. Equit. Meter Co.*
Plouff Co.*
Prec. Ther. & Inst. Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Scientific Instrument Co.*
Star Brass Mfg. Co.*
TagliabueMfg.Co.,C.J.*
Uehling Instrument Co.*
United States Gauge Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilkens-Anderson Co.

Recording Distance
Wallace & Tiernan Prod., Inc.*

Profile
Stockton P. G. Corp.*
Van Keuren Co.*
West & Dodge Thread Gauge Co., Inc.*
Western Scientific Co.

Radius
Lufkin Rule Co.*

Rain
Braun Corp.
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Eimer & Amend
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.*
Gray Instrument Co.*

GAGES
Rain (Cont'd)
Green, Henry J.*
Greene Brothers, Inc.
Gurley, W. & L. E.
Kauffman-Lattimer Co.
Prec. Ther. & Inst. Co.*
Taylor Instrument Cos.*
Walker & Co., Inc., G. T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.

Recording Distance
Bailey Meter Co.*
Brown Instrument Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.*
Gordon Co., Claud S.
Greene Brothers, Inc.
H-B Inst. Co., Inc.
Liquidometer Corp.*
Marsh Corp., Jas. P.*
Minn-HoneywellReg.Co.*
Parks, Jr., Harry S.*
Pitts. Equit. Meter Co.*
Republic Flow Met. Co.*
U. S. Fare Rec. Co.*

Rifle Bore
Scherr Co., George*

Ring
Bath & Co., Inc., John*
Comtor Co.
Eitzen Co., Louis C.
Pratt & Whitney Co.*
Prec. Gage & Tool Co.*
Sheffield Gage Corp.*
Van Keuren Co.*
West & Dodge Thread Gauge Co., Inc.*

Screw Thread
Bath & Co., Inc., John*
Consolidated Ashcroft Hancock Co., Inc.*
Federal Products Corp.*
Jones & Lamson Mach. Co.*
Lufkin Rule Co.*
Pratt & Whitney Co.*
Sheffield Gage Corp.*
Starrett Co., L. S.*
Union Tool Co.*
Wells Mfg. Co.*
Western Scientific Co.
West & Dodge Thread Gauge Co., Inc.*

Snap
Meldrum Gabrielson Corp.*
Pratt & Whitney Co.*

Spline
Pratt & Whitney Co.*

Sprinkler Tank
Prec. Ther. & Inst. Co.*

Star
Pratt & Whitney Co.*

Strain
American Inst. Co.*
Bacharach Ind. Inst. Co.*
Baldwin-Southwark Corp.
Binckley, Geo. Sidney*
CambridgeInst.Co.,Inc.*
Eitzen Co., Louis C.
Friez & Sons, Inc., J. P.*
General Elec. Co.*
Gordon Co., Claud S.
Olsen Test. Mach. Co.*
Starrett Co., L. S.*

Surface
Bausch & Lamb Opt.Co.*
Lufkin Rule Co.*
Millers Falls Co.*
Starrett Co., L. S.*

Taper
Pratt & Whitney Co.*

Telescoping
Lufkin Rule Co.*

Thickness
Lufkin Rule Co.*
Millers Falls Co.*

Thickness, Magnetic
Commercial Eng. Labs.*

Tide
American Inst. Co.
Binkley, Geo. Sidney*
Freiz&Sons,Inc.,JulienJ.*
Fuess, Inc., R.*
General Elec. Co.*
Gurley, W. & L. E.*
Mann Instrument Co.*
Parks, Jr., Harry S.*
Wallace & Tiernan Prod., Inc.*

Vacuum
American Meter Co.*
Amthor Test. Inst. Co., Inc.*
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binkley, Geo. Sidney*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Central Scientific Co.*
Chicago Apparatus Co.
Connecticut Tel. & Elec. Corp.*
Consolidated Ashcroft Hancock Co., Inc.*
Continental Electric Co.*
Crosby S. G. & V. Co.*
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Dickson Co.*
Dubrovin, John*
Eimer & Amend
Fisher Scientific Co.
Foxboro Co.*
Fuess, Inc., R.
General Electric Co.*
GeneralElectronicsCorp.*
General Inst. & Con. Co.
General Physical Lab.*
Greene Brothers, Inc.
Greiner Co., Emil
Hays Corp.*
Hoffman Spec. Co., Inc.*
Hoke, Inc.*
Kollsman Inst. Co., Inc.*

GAGES
Vacuum (Cont'd)
Lonergan Co., J. E.*
Macalaster Bicknell Co.*
Marsh Corp., Jas. P.*
Meriam Co.*
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
National Gauge Corp.*
N. J. Lab. Supply Co.
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.
Pitts. Equit. Meter Co.*
Plouff Co.*
Pneumercator Co., Inc.*
Podbielniak Ind. Res. Eng. Labs.*
Prec. Ther. & Inst. Co.*
Refinery Supply Co.
Rochester Mfg. Co., Inc.*
Sargent & Co., E. H.
Scientific Instrument Co.*
Sensitive Res. Inst. Co.*
Star Brass Mfg. Co.*
Stromberg Motoscope Corp.*
Taylor Instrument Cos.*
Uehling Instrument Co.*
United States Gauge Co.*
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.

Viscosity
Visco Meter Corp.*

Volume
Bailey Meter Co.*
Brown Instrument Co.*
Foxboro Co.*
Greene Brothers, Inc.
Liquidometer Corp.*
Minn-HoneywellReg.Co.*
Parks, Jr., Harry S.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Wallace & Tiernan Prod., Inc.*

Volume & Pressure Recording
American Meter Co.*

Water Level
American Met. Co., Inc.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Burt Scien. Labs., R. C.*
Consolidated Ashcroft Hancock Co., Inc.*
Defender Auto. Reg. Co.*
Dickson Co.*
Foxboro Co.*
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.
General Inst. & Con. Co.
Greene Brothers, Inc.
Gurley, W. & L. E.*
International Filter Co.*
King-Seeley Corp.*
Klingerit, Inc.*
Liquidometer Corp.*
Machlett & Son, E.*
McNeill Eng. Equip. Co., T. W.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Parks, Jr., Harry S.*
Petrometer Corp.*
Pitts. Equit. Meter Co.*
Plouff Co.*
Republic Flow Met. Co.*
Rochester Mfg. Co., Inc.*
Simplex V. & M. Co.*
Superior Meter Co., Inc.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
Uehling Instrument Co.*
United States Gauge Co.*
Vapor Rec. Systems Co.*
Wallace & Tiernan Prod., Inc.*
Water Works Supply Co.
Braun Corp.
Chicago Apparatus Co.
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.
Greene Brothers, Inc.
Taylor Instrument Cos.*
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Zernickow Co., O.

Wind
Binckley, Geo., Sidney*
Friez&Sons,Inc.,JulienP.*
Fuess, Inc., R.*
Mann Inst. Co.*
Taylor Inst. Cos.*

Wire Measuring
Federal Products Corp.*

GAGE SHOCK ABSORBERS

Meriam Co.*

GAGE TESTERS

American Inst. Co.*
Amthor Test. Inst. Co., Inc.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc., W. H.
Detroit Test. Mach. Co.*
Greene Brothers, Inc.
Marsh Corp., Jas. P.*
Mercoid Corp.*
Parks, Jr., Harry S.*
Perkins & Son, Inc., B. F.*
Refinery Supply Co.*
Star Brass Mfg. Co.*
Testing Machines, Inc.
Olsen Test. Mach. Co., Tinius*
Zeiss, Inc., Carl

GALVANOMETERS

Central Scientific Co.*
Gilmore Drug Co., W. J.*
Marietta Apparatus Co.
Mine & Smelter Sup. Co.
Westinghouse E. & M. Co.*

GALVANOMETERS
(Cont'd)

Astatic
Cambridge Inst. Co., Inc.*
Chicago Apparatus Co.*
Gray Instrument Co.*
Leeds & Northrup Co.*
Rawson Elec. Inst. Co.*
Rubicon Co.*
Schaar & Co.
Sensitive Res. Inst. Co.*
Welch Mfg. Co., W. M.*
Western Scientific Co.

Ballistic
Cambridge Inst. Co., Inc.*
Chicago Apparatus Co.
Eimer & Amend
Gray Instrument Co.*
Leeds & Northrup Co.*
Rawson Elec. Inst. Co.*
Rubicon Co.*
Schaar & Co.
Sensitive Res. Inst. Co.*
Sticht & Co., H. H.*
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.*
Western Scientific Co.

Broca
Cambridge Inst. Co., Inc.*
Gray Instrument Co.*

D'Arsonval
Braun Corp.
Byram, H. F.
Cambridge Inst. Co., Inc.*
Chicago Apparatus Co.*
Eimer & Amend
Etna Electric Works*
General Electric Co.*
General Inst. & Con. Co.
G-M Labs., Inc.*
Gray Instrument Co.*
Hickok Elect. Inst. Co.*
Hoyt Elect. Inst. Wks.*
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Pyrometer Inst. Co.*
Rawson Elec. Inst. Co.*
Reliance Instrument Co.*
Roller-Smith Co.*
Rubicon Co.*
Sargent & Co., E. H.
Schaar & Co.
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.
Standard Elec. Time Co.
Sticht & Co., H. H.*
Thermo Con. Dev., Inc.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

Differential
Cambridge Inst. Co., Inc.*
Rawson Elec. Inst. Co.*
Gray Instrument Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.

Double Coil
Cambridge Inst. Co., Inc.*
Engelhard, Inc., Charles*
Foxboro Co.*
Gray Instrument Co.*
Ohmite Mfg. Co.*
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Western Scientific Co.

Einthoven String
Cambridge Inst. Co., Inc.*
Gray Intrument Co.*
Sticht & Co., H. H.*

Mirror
Boehmke Optical Co.*
Braun Corp.
Cambridge Inst. Co., Inc.*
Fish-Schurman Corp.*
Fuess, Inc., R.
Gray Instrument Co.*
Leeds & Northrup Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Sticht & Co., H. H.*
Western Scientific Co.

Off Set Coil Type
Thwing Instrument Co.*

Pascher
Cambridge Inst. Co., Inc.*
Gray Instrument Co.*

Thomson
Cambridge Inst. Co., Inc.*
Gray Instrument Co.*
Leeds & Northrup Co.*

GALVANOSCOPE
Braun Corp.
Central Scientific Co.*
Kauffman-Lattimer Co.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.*
Western Scientific Co.

GAS ANALYTICAL METERS

Carbon Dioxide
Bacharach Ind. Inst. Co.*
Braun Corp.
Brown Instrument Co.*
Cambridge Inst. Co., Inc.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Dwyer Mfg. Co., F. W.*
Eimer & Amend*
Ellison Draft Gage Co.*
Empire Lab. Supply Co., Inc.
Engelhard, Inc., Chas.*
Ess Instrument Co.*

GAS ANALYTICAL METERS

Carbon Dioxide (Cont'd)
Fisher Scientific Co.*
Fish-Schurman Corp.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Hays Corp.*
Jensen Instrument Co.
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Luertzing Glass Inst. Co.*
Mine & Smelter Sup. Co.
Mine Safety Appl. Co.*
Minn-HoneywellReg.Co.*
Permutit Co.*
Prec. Ther. & Inst. Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Sargent & Co., E. H.
Schaar & Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Uehling Instrument Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilkens-Anderson Co.
Williams Apparatus Co.*

Carbon Monoxide
Bacharach Ind. Inst. Co.*
Braun Corp.
Cambridge Inst. Co., Inc.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Empire Lab. Supply Co., Inc.
Engelhard, Inc., Chas.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
Hays Corp.*
Mine Safety Appl. Co.*
PrecisionTher.&Inst.Co.*
Sensitive Res. Inst. Co.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.

Chemical-Indicating
Braun Corp.
Curtin & Co., Inc., W. H.
Fisher Scientific Co.*
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hays Corp.*
Jensen Instrument Co.
Macalaster Bicknell Co.*
Mine Safety Appl. Co.*
Rascher & Betzold
Refinery Supply Co.
Schaar & Co.
Superior Met. Co., Inc.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Uehling Instrument Co.*
Walker & Co., Inc., G. T.

Chemical-Recording
Braun Corp.
Curtin & Co., Inc., W. H.
Greene Brothers, Inc.
Hays Corp.*
Mine Safety Appl. Co.*
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Uehling Instrument Co.*

Electrical-Indicating
Bacharach Ind. Inst. Co.*
Baker Ice Mach. Co., Inc.
Brown Instrument Co.*
Bullard Co., E. D.
Cambridge Inst. Co., Inc.*
Engelhard, Inc., Charles*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Jensen Instrument Co.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Refinery Supply Co.*
Thermo Con. Dev., Inc.

Electrical-Recording
Bacharach Ind. Inst. Co.*
Baker Ice Mach. Co., Inc.
Brown Instrument Co.*
Engelhard, Inc., Charles*
Greene Brothers, Inc.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Refinery Supply Co.

Mechanical-Indicating-Recording
Permutit Co.*

Orsat
Bailey Meter Co.*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Defender Auto. Reg.Co.*
Dwyer Mfg. Co., F. W.*
Eimer & Amend*
Fisher Scientific Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., Otto*
Griebel Inst. Co., Inc.*
Hays Corp.*
Jensen Instrument Co.
Laboratory Materials Co.
Luertzing Glass Inst. Co.*
Macalaster Bicknell Co.*
Machlett & Son, E.*
McNeill Eng. Equip. Co., T. W.
Milwaukee Glass Works, Inc.*
N. Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.*
Prec. Ther. & Inst. Co.
Rascher & Betzold
Refinery Supply Co.
RepublicFlowMetersCo.*
Sci. Glass App. Co.*
Steele, Erik F.*
Teschner-Quinn Corp.
Walker & Co., Inc., G. T.
Williams App. Co.*

GAS ANALYTICAL METERS

Sulphur Dioxide
CambridgeInst.Co.,Inc.*
Engelhard, Inc., Chas.*
Hays Corp.*
Leeds & Northrup Co.*
Tagliabue Mfg. Co.*

GAS CONTROL
Ammoniation, Black Manufacture, Bottle Sterilization, Chlorination, Citrus Fruit Treatment, Flour Treatment, Slime Treatment, Sterilization and Water Treatment
Wallace & Tiernan Co., Inc.*

GAS FLOW INDICATORS
See Indicators, Gas Flow

GAS LEAK INDICATORS
See Indicators, Gas Leak

GAS METERS
See Meters, Gas

GAS PURIFYING MATERIALS
Connelly Iron S. & G. Co.*

GILLMORE NEEDLES
See Cement Needle Apparatus

GLASSWARE LABORATORY
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Daigger & Co., A.
Denver Fire Clay Co.
Doerr Glass Co., Inc.*
Eimer & Amend
Empire Lab. Supply Co., Inc.*
General Biol. Sup. House
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Kimble Glass Co.*
Laboratory Materials Co.
Leitz, Inc., E.
Luertzing Glass Inst. Co.*
Macalaster Bicknell Co.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N. Y. Biol. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Rascher & Betzold
Schaar & Co.
Sargent & Co., E. H.
Sci. Glass App. Co.*
Specialty Glass Co.*
Standard Sci. Sup. Corp.
Teschner-Quinn Corp.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Williams Apparatus Co.

GLASS TUBING
Heat Resisting, Ultra-Violet Transmitting, Ultra-Violet Transmitting Opaque to Visible
Fish-Schurman Corp.*

GONIOMETER
Braun Corp.
Fuess, Inc., R.*
Leitz, Inc., E.
Mann Instrument Co.*
Marietta Apparatus Co.
Western Scientific Co.

GOVERNORS

Air
American Meter Co.*
D'Este Co., Julian*
Fisher Governor Co.*
Foster Eng. Co.*
Johnson Service Co.
Plouff Co.*
Taylor Instruments Cos.*

Altitude
Fisher Governor Co.*
Foster Eng. Co.*
McAlear Mfg. Co.*
Mercon Regulator Co.*
Plouff Co.*

District
Fisher Governor Co.*

Dump
Wilgus Mfg. Co.*

Engine
American Meter Co.*
Greene Brothers, Inc.
McAlear Mfg. Co.*
Mercon Regulator Co.*

Feed Water
Wilgus Mfg. Co.*

Gas
American Meter Co.*
Connelly I. S. & G. Co.*
Eclipse Fuel Eng. Co.*
Fisher Governor Co.*
Greene Brothers, Inc.
Holzapfel Inst. Co.*
McAlear Mfg. Co.*
Mulcare Eng. Co.*
Shallcross Controls, Inc.*
Taylor Instrument Cos.*
Wallace & Tiernan Prod. Inc.*
Wilgus Mfg. Co.*

Hydraulic
D'Este Co., Julian*
Fisher Governor Co.*
Foster Eng. Co.*
Greene Brothers, Inc.
Hydraulic Press Mfg. Co.*
Taylor Instruments Cos.*
Wilgus Mfg. Co.*

Liuid Level
Wilgus Mfg. Co.*

Pressure
American Meter Co.*
Cash Co., A. W.*
Connelly I. S. & G. Co.*
Davis Reg. Co.*

GOVERNORS

Pressure (Cont'd)
Fisher Gov. Co.*
Foster Eng. Co.*
General Electric Co.*
Greene Brothers, Inc.
Holzapfel Inst. Co.*
Hydraulic Press Mfg. Co.*
Klipfel Mfg. Co.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Northern Equip. Co.*
Plouff Co.*
Shallcross Controls, Inc.*
Taylor Instrument Cos.*
Watts Regulator Co.*
Wilgus Mfg. Co.*

Pump
Cash Co., A. W.*
D'Este Co., Julian*
Fisher Gov. Co.*
Foster Eng. Co.*
Greene Brothers, Inc.
Hydraulic Press Mfg. Co.*
Klipfel Mfg. Co.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Northern Equip. Co.*
Plouff Co.*
Watts Regulator Co.*
Wilgus Mfg. Co.*

Station
American Meter Co.*

Steam
Wilgus Mfg. Co.*

Tank
D'Este Co., Julian*
Fisher Governor Co.*
Foster Eng. Co.*
Greene Brothers, Inc.
Plouff Co.*

Vacuum
Northern Equip. Co.*
Wilgus Mfg. Co.*

Water Pressure
Wilgus Mfg. Co.*

GRADUATING MACHINES
Gaertner Scientific Corp.*
Mann Instrument Co.*
Sensitive Res. Inst. Co.*

GRAIN TESTERS
See Testers, Grain

GRAVIMETERS
Cambridge Inst. Co., Inc.*
Refinery Supply Co.*
Greene Brothers, Inc.
Schultheis Corp., E. W.*
TagliabueMfg.Co.,C.J.*

GRAVITOMETER
American Met. Co., Inc.*
Binckley, G. S.*
Braun Corp.
Eimer & Amend*
General Inst. & Con. Co.
Greene Brothers, Inc.
Pacific Scientific Co.
Permutit Co.*
Prec. Ther. & Inst. Co.
Refinery Supply Co.
Schultheis Corp., E. W.*
Thwing Instrument Co.*
Western Scientific Co.

GREASE TESTING APPARATUS
See Testers, Grease

GROUND DETECTORS
Century Electrical Co.*
General Electric Co.*
Gray Instrument Co.*
Roller-Smith Co.*
Western Electro-Mech. Co., Inc.*
Western Elec. Inst. Corp.*

GROUND-OHMER
See Earth Resistance Meter

GYROSCOPES
Aloe Co., A. S.*
American Askania Corp.
Braun Corp.
Central Scientific Co.*
Sperry Gyroscope Co., Inc.*
Walker & Co., Inc., G. T.

HARDNESS METER
for Plastic Films
See Tester, Hardness of Plastic Films

HARMONIC ANALYZERS
Gaertner Scientific Corp.*
General Electric Co.*
General Radio Co.*
Rawson Elec. Inst. Co.*
Riverbank Labs.*
Sensitive Res. Inst. Co.*
United Sound Eng. Co.
Warren-Knight Co.

HARMONIC SYNTHESIZERS
Riverbank Labs.*

HELIOMETER
Gaertner Scientific Corp.*
Western Scientific Co.

HELIOSTAT
Eastern Science Sup. Co.*

HIGH FREQUENCY APPARATUS
Central Scientific Co.*
Clough-Brengle Co.*
General Electric Co.*
General Radio Co.*
Lepel High Frequency Labs., Inc.*
RCA Mfg. Co., Inc.*
Roller-Smith Co.*
Standard Elec. Time Co.
Western Scientific Co.
Western Elec. Co., Inc.*

HIGH VOLTAGE

Indicators
Central Scientific Co.
Clough-Brengle Co.*
General Electric Co.*
General Electron. Corp.*
General Physical Lab.*
Mine & Smelter Sup. Co.
Rawson Elec. Inst. Co.*
Refinery Supply Co.
Roller-Smith Co.*

HIGH VOLTAGE

Indicators (Cont'd)
Schweitzer & Conrad, Inc.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.
Western Scientific Co.
Westinghouse E. & M. Co.*

Measuring Devices
Bristol Co.*
Ferranti Electric, Inc.*
General Electric Co.*
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Western Scientific Co.
Westinghouse E. & M. Co.*
Weston Elec. Inst. Corp.*

Testing Devices
General Electric Co.*
Minerallac Electric Co.*
Sensitive Res. Inst. Co.*
Western Scientific Co.
Westinghouse E. & M. Co.*
Weston Elec. Inst. Corp.*

HOOK GAGE
Burt Science Labs., R. C.
Gurley, W. & L. E.*
Leupold, Volpel & Co.*

HOUR COUNTERS
See Counters, Hour

HUMIDITY RECORDERS
See Recorders, Humidity

HUMIDISTATS
Atlantic Prec. Inst. Co.*
Automatic Products Co.*
Brown Instrument Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Detroit Lubricator Co.*
Friez & Sons, Inc., J. P.
Greene Brothers, Inc.
H-B Inst. Co., Inc.*
Johnson Service Co.*
Lewis Air Condit., Inc.*
Lewis Eng. Co.*
Minn-HoneywellReg.Co.*
National Regulator Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Penn Electric Switch Co.*
Powers Reg. Co.*
Taylor Instrument Cos.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilbin Inst. Corp.*

HYDRAULAGRAPHS
Consolidated Ashcroft Hancock Co., Inc.*

HYDROGENATION APPARATUS
Daigger & Co., A.*
Parr Instrument Co.*

HYDROGEN-ION APPARATUS
See also Meters, Hydrogen-Ion
LaMotte Chem. Prod. Co.*
Rubicon Co.*
Taylor & Co., Inc., W. A.*

HYDROGEN IONIZATION DETERMINATION INSTRUMENTS
Clough-Brengle Co.*

HYDROMETERS
Bauer Ther. Co., Inc.*
Berg Mfg. Co., James*
Bliss & Co., Inc., John
Braun Corp.
Central Scientific Co.
Chaslyn Co.*
Curtin & Co., Inc., W. H.
Daigger & Co., A
Dearborn Chemical Co.*
Denver Fire Clay Co.
Dodge Co., A. J.
Eimer & Amend*
Elliott Co., B. K.
Empire Lab. Supply Co., Inc.*
Fevagage Lab.
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W. J.
General Inst. & Con. Co.
Gordon Co., Claud S.
Gray Instrument Co.*
Greiner Co., Emil
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
H-B Inst. Co., Inc.*
Heil Chemical Co., Henry
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Huddleston, J. S. F.
Jensen Instrument Co.
Laboratory Materials Co.
Lewis Air Conditioners*
Macalaster Bicknell Co.
Mine & Smelter Sup. Co.
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
N. Y. Biol. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Nurnberg Ther. Co.*
Pacific Scientific Co.
Palo-Myers, Inc.*
Permutit Co.*
Philadelphia Ther. Co.*
Prec. Ther. & Inst. Co.*
Rascher & Betzold*
Refinery Supply Co.
Ruehfel Co., George*
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Sci. Glass App. Co.*
Scientific Instrument Co.*
Standard Elec. Time Co.
Standard Sci. Sup Corp.
Stromberg Motoscope Corp.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
Teschner-Quinn Corp.
Testrite Instrument Co.*
Wagner & Son, Carl H.*

HYDROMETE
Walker &
Weiss & S
Weksler Th
Welch Mfg W. M.
Western S

HYDROSCOPE
Denver Fir
Empire Lab. Inc.
Gilmore Dr W
Taylor Inst

HYGROMETE

Indicating
Amthor Test. Inst. Inc.
Atlantic Pre
Bauer Ther. Co., In
Bliss & Co. Inc.
Braun Corp.
Brown Inst
Central Scien
Chicago Ap

HYGROMETERS

Indicating
Chicago Instrument
Consolidated Ashcroft Hancock Co., In
Curtin&Co., Inc. W. H.
Denver Fire Clay
Eimer & Amend
Elliott Co., B. K.
EmpireLab.Sup.Co.Inc.*
Fee & Stemwedel, Inc.*
Fisher Scienti
Friez&Sons,Inc. J. P.*
Fuess, Inc., R.*
GeneralInst.&Con.
Gilmore Drug Co. W.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil*
Griebel Inst. Co., Inc.*
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, W
Howe & French, Inc.
Johnson Service Co.*
Laboratory Materials C
Lewis Air Cond., Inc.*
Mine & Smelter Sup. C
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co
N. Y. Lab. Sup. Co., Inc.
Parks-Cramer Co.
Pacific Scientific C
Phila. Ther. Co.*
PrecisionTher.&Inst.Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Scientific Inst. Co.*
Stan. Sci. Supply
TagliabueMfg.Co.C.J.*
Taylor Inst. Cos.*
Testing Machines, Inc.*
Testrite Inst. Co.*
Thermo Con. Dev. In
Thwing Inst. Co.*
Wagner & Son, Carl H.*
Walker&Co.,Inc.,G.T.
Warren-Knight Co.
Weksler Ther. Corp.
Welch Mfg. Co. W. M.
Western Scientific C

Recording
Amthor Test. Inst. Co. Inc.
Atlantic Pre. Inst. Co.*
Braun Corp.
Brown Inst. Co.*
Cons. Ashcroft Hancock Co., Inc.*
Chicago Apparatus C
Curtin&Co.,Inc. W. H.
Draper Mfg. Co.*
Eimer & Amend
Fisher Scientific C
Friez&Sons,Inc. J. P.*
General Inst. & Con. C
Gordon Co., Claud S.*
Green, Henry J.*
Greene Brothers, Inc.
Howe & French, Inc.
Minn-HoneywellReg.Co.*
N. J. Lab. Supply C
Pacific Scientific Co
Parks-Cramer C
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Taylor Instrument C
Walker & Co., Inc., G. T.
Western Scientific C

HYGRO-THERMOGRAPHS
Green, Henry J.*

HYPSOMETERS
Braun Corp.
Chicago Apparatus C
Fuess, Inc., R.*
Gilmore Drug Co. W.
Lufkin Rule Co.*
Schultheis Corp. E. W.*
Warren-Knight Co.
Welch Mfg. Co. W. M.*
Western Scientific Co.

IGNITION VELOCITY METERS
Hays Corp.*

IMPACT TESTING MACHINES
See Testing Machines, Impact

INCLINOMETERS
Baldwin-South
Fish-Schurman Corp.*
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.*
Prec. Ther. & Inst. C
Rieker Inst. C
Warren-Knig
White Co., D

INDICATORS
Absolute Pressu
See Gages, Abs Pressure

INDICATORS
Air Speed
Aeromarine Inst. Co., Inc.
General Inst. & Con. Co.
Greene Brothers, Inc.
Henschel&Co.,Inc.C.J.*
Kollsman Inst. Co., Inc.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Prec. Ther. & Inst. Co.*
Barometric Pressure
Aeromarine Inst. Co., Inc.*
Bristol Co.*
Chicago Apparatus Co.
Consolidated Ashcroft Hancock Co., Inc.*
Defender Auto. Reg. Co.*
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.*
Greene Brothers, Inc.
Kollsman Inst. Co., Inc.*
Pacific Scientific Co.
Podbielniak Ind. Res. & Eng. Labs.*
Prec. Ther. & Inst. Co.*
Refinery Supply Co.
Taylor Instrument Cos.*
United States Gauge Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.
B. T. U.
American Meter Co.*
Bailey Meter Co.*
Eimer & Amend
Engelhard, Inc., Charles*
Greene Brothers, Inc.
Hays Corp.*
Permutit Co.*
Refinery Supply Co.
Walker & Co., Inc., G. T.
DRAFT
See Gages, Draft
Drift
Gurley, W. & L. E.*
Kollsman Inst. Co., Inc.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
ENGINE
See Engine Indicators
Engine Compression
Holzapfel Inst. Co.*
Flow, Gas
See Flowmeters, Gas
Flow, Oil
See Flowmeters, Liquids
Flow, Steam
See Flowmeters, Steam
Flow, Water
See Flowmeters, Liquid
Frequency
See Meters, Frequency
Fuel Flow
Bristol Co.*
Commercial Eng. Labs.*
Fish-Schurman Corp.*
Fulton Sylphon Co.*
Gen. Inst. & Con. Co.
Greene Brothers, Inc.
Meriam Co.*
Morey & Jones, Ltd.*
Schutte & Koerting*
Refinery Supply Co.
Thermo Con. Dev., Inc.
Water Wks. Supply Co.
Gas Holder Position
Bailey Meter Co.*
Bristol Co.*
General Electric Co.*
Wallace & Tiernan Products, Inc.*
Gas Flow
American Gas Fur. Co.
American Meter Co.*
Bacharach Ind. Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Brown Instrument Co.*
Builders Iron Foundry*
Comm. Eng. Labs.*
General Inst. & Con.Co.
Greene Brothers, Inc.
Hays Corp.*
Hoke, Inc.*
Meriam Co.*
Minn-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Pitts. Equit. Met. Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting Co.*
Teltru Instrument Co.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.
Gas Leak
Brown Instrument Co.*
Bullard Co., E. D.
Clark Co., H. W.*
Gilmore, E. R.*
Globe Phone Mfg. Corp.*
Greene Brothers, Inc.
Mine Safety Appl. Co.*
Minn-Honeywell Reg.Co.*
N. J. Lab. Supply Co.
Refinery Supply Co.
Schaar & Co.
Taylor Instrument Cos.*
Teltru Instrument Co.
Gravity
American Met. Co.,Inc.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Greene Brothers, Inc.
Curtin & Co.,Inc.,W.H.
General Inst. & Con. Co.
Martin-Decker Corp.*
Permutit Co.*
Plouff Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Refinery Supply Co.
Schultheis Corp., E.W.*
Walker & Co.,Inc.,G.T.
Liquid Level
American Meter Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Boston Auto Gage Co.*

INDICATORS
Liquid Level (Cont'd)
Bristol Co.*
Builders Iron Foundry*
Bunnell & Co., J. H.*
Brown Instrument Co.*
Cochrane Corp.*
Con. Ashcroft Hancock Co., Inc.*
Curtin & Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Detroit Lubricator Co.*
Foxboro Co.*
Friez & Sons,Inc.,J.P.*
General Inst. & Con.Co.
Greene Brothers, Inc.
Gurley, W. & L.E.*
Henschel & Co.,Inc.,C.J.*
International Filter Co.*
Jensen Inst. Co.
Johnston & Jennings Co.*
Kollsman Inst. Co.,Inc.*
Leeds & Northrup Co.*
Liquidometer Corp.*
McNeill Eng. Equip. Co., T. W.*
Meriam Co.*
Mine & Smelter Sup.Co.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.*
Pitts. Equit. Meter Co.*
Plouff Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Rochester Mfg. Co.,Inc.*
Stewart Warner Corp.*
Tagliabue Mfg. Co.,C.J.*
Taylor Instruments Cos.*
Uehling Inst. Co.*
U. S. Gauge Co.*
Walker & Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.
Yarnall-Waring Co.*
Mine Gases
Bullard Co., E. D.
Mine Safety App. Co.*
Navigational
Hand & Sons Co., J. E.*
Phase
Ferranti Elec., Inc.*
Western Elec. Mech Co.*
WestinghouseE.&M.Co.*
Phase Sequence
Electrical Facilities, Inc.*
Ferranti Elec., Inc.*
General Electric Co.*
Leland Elec. Co.*
States Co.*
Sticht & Co., H. H.*
Western Elec. Mech.Co.*
Weston Elec. Inst. Corp.*
Polarity
Hickok Elec. Inst. Co.*
Roller-Smith Co.*
Western Scientific Co.
Rate of Climb
Aeromarine Inst. Co., Inc.*
Kollsman Inst. Co., Inc.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Running Time Totalizers
Cramer & Co.,Inc.,R.W.*
Salinity
Esterline-Angus Co.*
Gray Instrument Co.*
Leeds & Northrup Co.*
Pacific Scientific Co.
TagliabueMfg.Co.,C.J.*
Walker & Co., Inc., G. T.
Smoke
Bailey Meter Co.*
Brown Instrument Co.*
Defender Auto. Reg. Co.*
General Electric Co.*
General Inst. & Con. Co.
McNeill Eng. Equip. Co., T. W.*
Minn-HoneywellReg.Co.*
Thwing Inst. Co.*
Western Scientific Co.
Weston Elec. Inst. Corp.*
Temperature
See Pyrometers or Thermometers
Thread Lead
Bicknell-Thomas Co.*
Valve Position
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Elec. Tachometer Corp.*
General Inst. & Con. Co.
Henschel&Co.,Inc.,C.J.*
Minn-HoneywellReg.Co.*
Northern Equipment Co.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Shallcross Controls, Inc.*
Tefft-Jackson, Inc.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Prod., Inc.*
INDUCTORS
Leeds & Northrup Co.*
INSTRUMENT FUSES
Littlefuse Labs.*
INSTRUMENT TRANSFORMERS
American Opt. Co.*
Byram, H. F.
Central Scientific Co.
Electrical Facilities, Inc.*
Esterline-Angus Co.*
Ferranti Electric, Inc.*
General Electric Co.*
Gordon Co., Claud S.
Hickok Elec. Inst. Co.*
Landis & Gyr, Inc.
Miles Repro. Co., Inc.*
Mine & Smelter Sup. Co.
Podbielniak Ind. Res. & Eng. Labs.
Roller-Smith Co.*

INSTRUMENT TRANSFORMERS (Cont'd)
Sangamo Elec. Co.*
Sensitive Res. Inst., Co.*
Shallcross Mfg. Co.
Standard Elec. Time Co.
Sticht & Co., H. H.*
Western Electro-Mech. Co., Inc.*
Westinghouse E. & M. Co.*
Weston Elec. Inst. Corp.*
INSULATION TESTING EQUIPMENT
Biddle Co., James G.
Clough-Brengle Co.*
Electrical Inst. & Eng. Co., Inc.*
Ferranti Electric, Inc.*
General Electric Co.*
Gray Instrument Co.*
Hickok Elec. Inst. Co.*
Leeds & Northrup Co.*
Lewis Eng. Co.*
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sticht & Co., H. H.*
United Sound Eng. Co.*
Westinghouse E. & M. Co.*
INTERFEROMETERS
Akatos, Inc.
Braun Corp.
Eimer & Amend
Gaertner Scientific Corp.*
Hoffman Co., Samuel O.*
Scherr Co., George*
Zeiss Inc., Carl
INTERPOLATOR
Eastern Science Sup. Co.*
JOB TIMING RECORDERS
Cin. Time Recorder Co.*
Esterline-Angus Co.*
Howard Clock Co., E.*
Pacific Scientific Co.
Standard Elec. Time Co.
Stromberg Electric Co.*
KEYS & SWITCHES
Central Scientific Co.*
Fisher Scientific Co.
Kellogg Switchboard & Supply Co.*
Leeds & Northrup Co.*
Marietta Apparatus Co.
N. Y. Lab. Sup. Co., Inc.
Shallcross Mfg. Co.
Standard Elec. Time Co.
Western Elec. Co., Inc.*
Western Scientific Co.
KLYDONOGRAPHS
Westinghouse E. & M. Co.*
KVA RECORDERS
See Recorders, KVA
LABORATORY APPARATUS
Braun-Knecht-Heimann Co.
Burrell Tech. Sup. Co.
Chemical Rubber Co.
Eimer & Amend*
Fisher Scientific Co.*
National Scientific Corp.
Thomas Co., Arthur H.
Will Corp.
Williams, Brown & Earle, Inc.*
LABORATORY FURNITURE
Kewaunee Mfg. Co.*
LABORATORY GLASS APPARATUS
Greiner Co., Inc., O. R.*
Standard Glass Apparatus Works*
LABORATORY GLASSWARE
Corning Glass Works*
Specialty Glass Co.*
LABORATORY MOTORS
Parr Instrument Co.*
LABORATORY OVENS
Electric Heat Control Apparatus Co.*
Freas Thermo Elec. Co.*
LABORATORY PORCELAIN
See Porcelain
LACTOMETERS
Aloe Co., A. S.
Bauer Ther. Co., Inc.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Eimer & Amend*
Empire Lab. Supply Co., Inc.
Fleischhauer & Son, Fr.*
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Laboratory Materials Co.
Mine & Smelter Sup. Co.
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Prec. Ther. & Inst. Co.*
Rascher & Betzold*
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Sci. Glass App. Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Wagner & Son, Carl H.*
Walker & Co., Inc., G. T.
Weksler Ther. Corp.*
Western Scientific Co.
Welch Mfg. Co., W. M.
LEAK INDICATOR
See Indicator, Gas Leak
LENSES
Bausch & Lomb Opt. Co.*
General Scientific Corp.*
Kollmorgen Opt. Corp.*

LENS THICKNESS GAGE
See Gage, Lens Thickness
LEVELS
Circular Spirit
Geier & Bluhm, Inc.*
Dumpy
Beckmann Co., L.*
Berger&Sons,Inc.,C.L.*
Bruning Co., Inc., C.
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Elliott Co., B. K.
Gurley, W. & L. E.*
Kern Co.
Keuffel & Esser Co.*
Kolesch & Co.*
Leupold, Volpel & Co.*
Pitts. Inst. & Mach. Co.*
Post Co., Frederick
Soltmann, Inc., E. G.*
Ulmer Co., J. C.*
Warren-Knight Co.*
White Co., Inc., David*
Zeiss, Inc., Carl
Engineer's
Aloe Co., A. S.
Beckmann Co., L.*
Berger&Sons,Inc.,C.L.*
Bruning Co., Inc., C.
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Elliott Co., B. K.
Gurley, W. & L. E.*
Kern Co.
Keuffel & Esser Co.*
Kolesch & Co.*
Leupold, Volpel & Co.*
Pitts. Inst. & Mach. Co.*
Post Co., Frederick
Scheer Co., George*
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Ulmer Co., J. C.*
Union Tool Co.*
Warren-Knight Co.*
White Co., Inc., David*
Zeiss, Inc., Carl
Hand
Buff & Buff Mfg. Co.*
Central Scientific Co.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Gray Instrument Co.*
Gurley, W. & L. E.*
Keuffel & Esser Co.*
Leupold, Volpel & Co.*
Millers Falls Co.*
Pitts. Inst. & Mach. Co.*
Post Co., Frederick
Pratt & Whitney Co.*
Refinery Supply Co.
Soltmann, Inc., E. G.*
Warren-Knight Co.*
White Co., Inc., David*
Zeiss, Inc., Carl
Precision
Gray Instrument Co.*
Pratt & Whitney Co.*
Prism
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Kern Co.
Keuffel & Esser Co.
Leupold, Volpel & Co.*
Pitts. Inst. & Mach. Co.*
Warren-Knight Co.*
White Co., Inc., David*
Zeiss, Inc., Carl
Surveying
Ainsworth & Sons, Inc., Wm.*
Beckmann Co., L.*
Berger&Sons,Inc.,C.L.*
Bruning Co., Inc., C.
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Elliott Co., B. K.
Gurley, W. & L. E.*
Kern Co.
Keuffel & Esser Co.
Kolesch & C.*
Leupold, Volpel & Co.*
Pitts. Inst. & Mach. Co.*
Post Co., Frederick
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Ulmer Co., J. C.*
Warren-Knight Co.*
White Co., Inc., David*
Zeiss, Inc., Carl
Wye
Ainsworth & Sons, Inc., Wm.*
Beckmann Co., L.*
Berger&Sons,Inc.,C.L.*
Bruning Co., Inc., C.
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Elliott Co., B. K.
Geier & Bluhm, Inc.*
Gurley, W. & L. E.*
Kern Co.
Keuffel & Esser Co.*
Kolesch & Co.*
Leupold, Volpel & Co.*
Pitts. Inst. & Mach. Co.*
Post Co., Frederick
Soltmann, Inc., E. G.*
Ulmer Co., J. C.*
Warren-Knight Co.*
White Co., Inc., David*
LIGHTHOUSE INSTRUMENTS
Wallace & Tiernan Co., Inc.*
LIGHT WAVE MEASURING EQUIPMENTS
Van Keuren Co.*
LINEAR FOOTAGE METER
Tally-Meter Co.*
Toledo Scale Co.*
LINE CURRENT TEST SETS
Western Electro-Mech. Co., Inc.*
LINE OF POSITION PLOTTER
Eastern Science Sup. Co.*
LINOMETERS
McDonnell Odometer Co.*

LIQUID LEVEL RECORDERS
See Recorders, Liquid Level
LOUVER OPERATING DEVICES
Reynolds Gas Reg. Co.*
LUMBER COUNTERS
McDonnell Odometer Co.*
LUSTER METER
Akatos, Inc.*
MACHINISTS SQUARES
Union Tool Co.*
MAGNETIC APPARATUS for Controlling of Heat-Treating Furnaces
Magnetic Analysis Corp.*
MAGNETIC INSPECTORS
Cambridge Inst. Co., Inc.*
Commercial Eng. Labs.*
General Electric Co.*
Koch & Co., Paul W.*
Leeds & Northrup Co.*
Magnaflux Corp.*
Magnetic Analysis Corp.*
MAGNETOMETER
American Askania Corp.*
Braun Corp.
Cambridge Inst. Co., Inc.*
Central Scientific Co.*
Gaertner Scientific Corp.*
Kern Co.
Precision Inst. Co., Inc.*
Welch Mfg. Co., W. M.*
Rawson Elec. Inst. Co.*
Reliance Inst. Co.*
Roller-Smith Co.*
Rubicon Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.
MAGNIFIERS
American Opt. Co.*
Bausch & Lomb Opt. Co.*
Bliss & Co., Inc., John*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Denver Fire Clay Co.
Dietzgen Co., Eugene
Elliott Co., B. K.
Empire Lab. Sup., Co., Inc.
Fisher Scientific Co.*
Frank, K. G.*
Fuess, Inc., R.*
General Scientific Corp.*
Gilmore Drug Co., W. J.
Greiner Co., Emil
Gurley, W. & L. E.
Howe & French, Inc.
Kauffman-Lattimer Co.
Kollmorgen Opt. Corp.*
Laboratory Materials Co.
Leitz, Inc., E.*
Mine & Smelt. Sup. Co.
N. J. Lab. Supply Co.
N. Y. Biol. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Refinery Supply Co.
Sargent & Co., E. H.
Spencer Lens Co.*
Standard Sci. Sup. Corp.
Testrite Instrument Co.*
Walker & Co., Inc., G. T.
Warren Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Wollensak Optical Co.*
Zeiss, Inc., Carl
MALT TESTING APPARATUS
See Tester, Malt
MANOMETERS
Aloe Co., A. S.
American Blower Corp.
American Gas Fur. Co.
American Meter Co.*
Amthor Test. Inst. Co., Inc.*
Bacharach Ind. Inst. Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Central Scientific Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc., W. H.
Crescent Eng. Co.*
Dwyer Mfg. Co., F. W.*
Empire Lab. Sup. Co., Inc.
Fisher Scientific Co.*
Fish-Schurman Corp.*
General Inst. & Con. Co.
Greiner Co., Emil*
Howe & French, Inc.
Jensen Instrument Co.*
Laboratory Materials Co.
Meriam Co.*
Mine & Smelt. Sup. Co.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
N. J. Lab. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Pacific Scientific Co.
Parks, Jr., Harry S.*
Pioneer Inst. Co., Inc.*
Podbielniak Ind. Res. & Eng. Labs.*
Precision Ther. & Inst. Co.*
Refinery Supply Co.*
Republic Flow Met. Co.*
Sargent & Co., E. H.
Sci. Glass App. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
Teltru Instrument Co.*
Testing Machines, Inc.*
Vapor Recovery Sys. Co.*
Walker & Co., Inc., G. T.
Wallace & Tiernan Prod. Inc.*
Water Works Supply Co.

MANOMETERS (Cont'd)
Welch Mfg. Co., W. M.*
Western Elec. Co., Inc.*
Western Scientific Co.
MARINE INSTRUMENTS
Moeller Inst. Co., Inc.*
Sperry Gyro. Co., Inc.*
MASTER CLOCKS
Bliss & Co., Inc., John
Cin. Time Rec. Co.*
Electric Tachom. Corp.*
Gaertner Scientific Corp.*
General Electric Co.*
Holtzer-Cabot Elec. Co.*
Landis & Gyr, Inc.
Standard Elec. Time Co.*
Stromberg Elec. Co.*
Wallace & Tiernan Prod. Inc.*
Waltham Watch Co.*
Western Elec. Co., Inc.*
MEASURING MACHINES
Gaertner Scientific Corp.*
Pratt & Whitney Co.*
Lineal
Durant Mfg. Co.*
Precision Length
Scherr Co., George*
Wire
Durant Mfg. Co.*
MEASURING SET
Field Strength
Western Elec. Co., Inc.*
MEASURING WIRES
Fortney Mfg. Co.*
Gear
Van Keuren Co.*
MEGOHMMETERS
Biddle Co., James G.
Clough-Brengle Co.*
Elec. Inst. & Eng. Co., Inc.*
General Radio Co.*
Gray Instrument Co.*
Shallcross Mfg. Co.*
Triplett Elec. Inst. Co.*
Sticht & Co., H. H.*
Illinois Test. Labs., Inc.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.
Western Scientific Co.
Weston Elec. Inst. Corp.*
MEGOHM VOLTMETERS
Clough-Brengle Co.
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Schaar & Co.
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Sticht & Co., H. H.*
Supreme Inst. Corp.*
Thermo Con. Dev., Inc.
Triplett Elec. Inst. Co.*
Western Scientific Co.
Weston Elec. Inst. Corp.* Corp.*
Wilkens-Anderson Co.
MELTING POINT APPARATUS
Aloe Co., A. S.
American Inst. Co.*
Bockel & Co., Inc., W.*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Empire Lab. Sup. Co., Inc.
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil*
Griebel Inst. Co., Inc.*
Heil Chemical Co., Henry
Howe & French, Inc.
Humboldt Mfg. Co.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Macalaster Bicknell Co.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Parr Instrument Co.
Podbielniak Ind. Res. & Eng. Labs.
Precision Scientific Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Scientific Glass App. Co.
TagliabueMfg.Co.,C.J.*
Teschner Quinn Corp.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilkens-Anderson Co.
METAL DETECTOR
Koch & Co., Paul W.*
METALLIC BELLOWS
Clifford Mfg. Co.*
METEOROLOGICAL INSTRUMENTS
American Askania Corp.
Bliss & Co., Inc., John
Braun Corp.
Central Scientific Co.
Fuess, Inc., R.
Gray Instrument Co.*
Green, Henry J.*
Hoffman Co., Samuel O.*
Mine & Smelter Sup. Co.
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Prec. Ther. & Inst. Co.*
Taylor Instrument Cos.*
Walker & Co., Inc., G. T.
Warren-Knight Co.
Weksler Ther. Corp.*
Welch Mfg. Co., W. M.
Western Scientific Co.
METER CUT OUT
Amperite Corp.*
METER PROVERS
American Met. Co., Inc.*
Ford Meter Box Co.*
Pitts. Equit. Meter Co.*

METER PROVERS
(Cont'd)

Gas
American Meter Co.*

METERS

Acid
Bailey Meter Co.*
Binckley, George Sydney*
Chicago Apparatus Co.
Meriam Co.*
Morey & Jones, Ltd.*
Palo-Myers, Inc.*
Pitts. Equit. Meter Co.*
Schutte & Koerting Co.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilkens-Anderson Co.

Air—Indicating
American Gas Fdr. Co.*
American Met. Co., Inc.*
Bailey Meter Co.*
Binckley, George Sydney*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Clark Blast Meter Co., Chas. J.*
Cochrane Corp.*
Commercial Eng. Labs.*
Cutler-Hammer, Inc.*
~~Foxboro Co.*~~
General Inst. & Con. Co.
Illinois Tes. Labs., Inc.*
Meriam Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
N. J. Meter Co.*
Pitts. Equit. Meter Co.*
Prec. Ther. & Inst. Co.*
Pyrometer Inst. Co.*
Rawson Elec. Inst. Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting Co.*
Simplex Val. & Met. Co.*
Superior Meter Co., Inc.*
TagliabueMfg.Co.,C.J.*
Wallace & Tiernan Prod. Inc.*
Water Works Supply Co.
Western Scientific Co.

Air—Recording
American Met. Co., Inc.*
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Cutler-Hammer, Inc.*
Foxboro Co.*
General Inst. & Con. Co.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pitts. Equit. Meter Co.*
Pyrometer Inst. Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
Water Works Supply Co.

Ampere Hour
Byram, H. F.
Chicago Apparatus Co.
Ferranti Electric, Inc.*
General Inst. & Con. Co.
Landis & Gyr, Inc.
Thermo Con. Dev., Inc.

Area
Schutte & Koerting Co.*

Boiler
Bailey Meter Co.*
Buffalo Meter Co.*
Esterline-Angus Co.*
General Inst. & Con. Co.
Hays Corp.*
Morey & Jones, Ltd.*
Refinery Supply Co.
Republic Flow Met. Co.*

Brake Testing
American Inst. Co.*
Scott Co., Henry L.*
United States Gauge Co.*
Western Scientific Co.

Capacity
Premier Crys. Labs., Inc.*

Capitance
Biddle Co., Jas. G.
CambridgeInst.Co.,Inc.*
Central Scientific Co.*
Clough-Brengle Co.*
General Electric Co.*
General Radio Co.*
Hickok Elec. Inst. Co.*
Leeds & Northrup Co.*
Roller-Smith Co.*
WestonElec.Inst.Corp.*

Clock
Automatic Light. Co.*
General Electric Co.*
Superior Meter Co., Inc.*
Bristol Co.*
Warren Telechron Co.*
Western Scientific Co.

Coal
Bailey Meter Co.*
Merrick Scale Mfg. Co.*

Compressed Air
American Met. Co., Inc.*
Bailey Meter Co.*
Binckley, George Sydney*
Builders Iron Foundry*
Commercial Eng. Labs.*
General Inst. & Con. Co.
Machlett & Son, E.*
New Jersey Meter Co.*
Pitts. Equit. Meter Co.*
Republic Flow Met. Co.*
Schutte & Koerting Co.*
Superior Met. Co., Inc.*

Condensation
Central Sta. Steam Co.*

Consumer's
American Meter Co.*
Landis & Gyr, Inc.
Pitts. Equit. Meter Co.*
Superior Met. Co., Inc.*

Demand
American Meter Co.*
Bailey Meter Co.
Brown Instrument Co.*
Esterline-Angus Co.*
General Electric Co.*

METERS

Demand (Cont'd)
Landis & Gyr, Inc.
Minn-HoneywellReg.Co.*
Pitts. Equit. Meter Co.*
Standard Elec. Time Co.
Westinghouse E. & M. Co.*

Earth Resistance, See Earth Resistance Meters

Electric
Byram, H. F.
Clough-Brengle Co.*
Esterline-Angus Co.*
Ferranti Electric, Inc.*
Gamewell Co.
General Electric Co.*
Kauffman-Lattimer Co.
Landis & Gyr, Inc.
Roller-Smith Co.*
Standard Elec. Time Co.
Triplett Elec. Inst. Co.*
Welch Mfg. Co., W. M.*
Westinghouse E. & M. Co.*
Wilkens-Anderson Co.

Electronic
Central Scientific Co.*
Electronic Products Co.*
Hickok Elec. Inst. Co.*
Paragon Electric Co.*
Rawson Elec. Inst. Co.*
Victoreen Inst. Co.*
Westinghouse E. & M. Co.*
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

Feed Water
Central Sta. Steam Co.*

Flow
See Flowmeters

Footage, see Linear

Footage Meters

Foot-Candle
American Optical Co.
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.*
Ferranti Electric, Inc.*
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Mine & Smelter Sup. Co.
Standard Sci. Sup. Corp.
Welch Mfg. Co., W. M.
Westinghouse E. & M. Co.*
Weston Elec. Inst. Corp.*

Frequency
Bristol Co.*
Byram, H. F.
CambridgeInst.Co.,Inc.*
Chicago Apparatus Co.
Clough-Brengle Co.*
Esterline-Angus Co.*
Ferranti Electric Inc.*
General Elec. Co.*
Inter.Broad.Equip.Co.*
Kellogg Switchboard & Supply Co.
Leeds & Northrup Co.*
Prem.CrystalLabs.,Inc.*
Roller-Smith Co.*
Western Elec. Co., Inc.*
Weston Elec. Inst. Corp.*

Gas
Central Scientific Co.
Foxboro Co.*
Gilmore Drug Co., W. J.
Podbielniak Ind. Res. & Eng. Labs.
Precision Scientific Co.*
Pre. Ther. & Inst. Co.
Republic Flow Met. Co.*
TagliabueMfg.Co.,C.J.*
Wallace & Tiernan Products, Inc.*
Wilkens-Anderson Co.

Gas—Dry Test
American Meter Co.*
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Foxboro Co.*
Greene Brothers, Inc.
Greiner Co., Emil
Greiner Co., Inc., O. R.*
Laboratory Materials Co.
Palo-Myers, Inc.
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Superior Met. Co., Inc.*
Teschner-Quinn Corp.
Western Scientific Co.

Gas—Wet Test
American Meter Co.*
Braun Corp.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Eimer & Amend
Fisher Scientific Co.
Foxboro Co.*
Greene Brothers, Inc.
Greiner Co., Emil
Greiner Co., Inc., O. R.*
Laboratory Materials Co.
Palo-Myers, Inc.
Precision Scientific Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Superior Met. Co., Inc.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.

Gas Density
Ess Inst. Co.*

Gas—Indicating
American Gas Fur. Co.*
American Met. Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pitts. Equit. Meter Co.*

METERS

Gas-Indicating (Cont'd)
Refinery Supply Co.
Schutte & Koerting Co.*
Superior Meter Co., Inc.*
Water Wks. Supply Co.

Gas—Integrating
American Met. Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cleveland Gas Met. Co.*
Cochrane Corp.*
Cutler-Hammer, Inc.*
Greene Brothers, Inc.
Lambert Meter Co., Inc.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Refinery Supply Co.
Schutte & Koerting Co.*
Water Wks. Supply Co.

Gas-Recording
American Met. Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Cutler-Hammer, Inc.*
Defender Auto. Reg. Co.*
Greene Brothers, Inc.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
U.S. Fare Recording Co.*
Water Wks. Supply Co.

Gasoline
Amer. Liquid Met. Co.*
Badger Meter Mfg. Co.*
Economy Elec. Dev. Co.*

Hydrogen-Ion
Aloe Co., A. S.
American Instrument Co.*
Bausch&LombOpt.Co.*
Braun Corp.
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend*
Elgin Softener Corp.*
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
GeneralInst.&Con.Co.
Gilmore Drug Co., W. J.
Gray Instrument Co.*
Greene Brothers, Inc.
Greiner Co., Inc., O. R.
Heil Chem. Co., Henry
Hellige, Inc.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Leeds & Northrup Co.*
Leitz, Inc., E.
Lewis Eng. Co.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.*
Pfaltz & Bauer, Inc.
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Sensitive Res. Inst. Co.*
Stan. Scien. Sup. Corp.
Teschner-Quinn Corp.
Thwing Instrument Co.*
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.

Gasoline
Bowser&Co.,Inc.,S.F.*
Buffalo Meter Co.*
Builders Iron Foundry*
Commercial Eng. Labs.*
Hersey Mfg. Co.*
Johnston & Jennings Co.*
National Meter Co.*
Neptune Meter Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Union Water Met. Co.*

Gas Station
American Meter Co.*
American Met. Co., Inc.*
Bailey Meter Co.*
National Meter Co.*
Pitts. Equit. Meter Co.*

High Pressure
American Meter Co.*
Morey & Jones, Ltd.*
Republic Flow Met. Co.*
Wallace & Tiernan Products, Inc.*

High Pressure Distribution
American Meter Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Cochrane Corp.*
Pitts. Equit. Meter Co.*
Schweitzer&Conrad,Inc.*

Hourly Cost or Rate
Bailey Meter Co.*

Index
American Met. Co., Inc.*

Inductance
Prem.CrystalLabs.,Inc.*

Light
Sight Light Corp.*

Mileage
U. S. Recording Co.*

Modulation
Dumont Labs., A. B.*
Clough-Brengle Co.*
Esterline-Angus Co.*
Ferranti Electric, Inc.*
General Radio Co.*

METERS

Modulation (Cont'd)
Inter. Broad. Equip. Co.*
RCA Mfg. Co., Inc.*
Western Elec. Co., Inc.*
Weston Elec. Inst. Corp.*

Moisture
Braun Corp.*
Buffalo Scale Co., Inc.*
CambridgeInst.Co.,Inc.*
Dietert Co., Harry W.*
Eimer & Amend*
Exact Weight Scale Co.*
Fisher Sci. Co.*
Friez&Sons,Inc.,J.P.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O.R.*
Heil Chem. Co., Henry
Humboldt Mfg. Co.*
Lab. Mat. Co.
NewarkScaleWks.,Inc.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Sticht Co., H. H.*
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.
Williams App. Co.*

Multi-rate
Landis & Gyr, Inc.*

Oil
Amer. Liquid Meter Co.*
Amer. Meter Co., Inc.*
Bailey Meter Co.*
Bowser&Co.,Inc.,S.F.*
Bristol Co.*
Buffalo Meter Co.*
Builders Iron Foundry*
Elgin Softener Corp.*
General Inst. & Con. Co.
Hersey Mfg. Co.*
Johnston&JenningsCo.*
Morey & Jones, Ltd.*
Nat. Airoil Burner Co.*
National Meter Co.*
Neptune Meter Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Schutte & Koerting Co.*
TagliabueMfg.Co.,C.J.*
Union Water Met. Co.*

Orifice
American Meter Co.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Curtin&Co.,Inc.,W.H.
Denver Fire Clay Co.
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Hoke, Inc.*
Meriam Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Simplex V. & M. Co.*
TagliabueMfg.Co.,C.J.*
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.

Output
Daven Co.*
Weston Elec. Inst. Corp.*

Oxygen
American Met. Co., Inc.*
Bailey Meter Co.*
CambridgeInst.Co.,Inc.*
Chicago Apparatus Co.
Cochrane Corp.*
General Inst. & Con. Co.
Hays Corp.*
Hoke, Inc.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
Superior Met. Co., Inc.*
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.*
Western Scientific Co.

Performance
Ohmer Fare Reg. Co.*

Phase Angle
Weston Elec. Inst. Corp.*

Photographic Exposure
Braun Corp.
Elliott Co., B. K.
Kauffman-Lattimer Co.
Lewis Eng. Co.*
Rhamstine, J. Thos.*
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*

Pitot Tube
American Meter Co.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Chicago Apparatus Co.
Clark Blast Meter Co., Chas. J.*
Curtin&Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Fuess, Inc., R.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Jensen Inst. Co.
Kollsman Inst. Co., Inc.*
Meriam Co.*
Morey & Jones, Ltd.*
Pioneer Inst. Co., Inc.*
Refinery Supply Co.

METERS

Pitot Tube (Cont'd)
Republic Flow Met. Co.*
Simplex V. & M. Co.*
Teltru Inst. Co.*
Water Wks. Supply Co.

Piezometer
Builders Iron Foundry*
Water Wks. Supply Co.

Positive Displacement
Amer. Liquid Meter Co.*
American Met. Co., Inc.*
Bowser&Co.,Inc.,S.F.*
Brodie Co., Inc., R. E.*
Buffalo Meter Co.*
Hersey Mfg. Co.*
Johnston & Jennings Co.*
National Meter Co.*
Neptune Meter Co*
Pitts. Equit. Meter Co.*
Superior Met. Co., Inc.*

Power Factor
Byram, H. F.
Clough-Brengle Co.*
Esterline-Angus Co.*
Ferranti Elec., Inc.*
General Electric Co.*
Roller-Smith Co.*
Weston Elec. Inst. Corp.*

Prepayment
American Meter Co.*
Ferranti Electric, Inc.*
General Electric Co.*
Landis & Gyr, Inc.
Pitts. Equit. Meter Co.*
Superior Meter Co., Inc.*

Proportional
American Met. Co., Inc.*
Hersey Mfg. Co.*
Pitts. Equit. Meter Co.*
Schutte & Koerting Co.*

Radio Frequency
Boonton Radio Corp.*

Reactance
Prem.CrystalLabs.,Inc.*

Reactive Component
Landis & Gyr, Inc.*

Rotary Displacement
Amer. Dis. Steam Co.*
American Meter Co.*
Hersey Mfg. Co.*
National Meter Co.*
Pitts. Equit. Meter Co.*
Union Water Meter Co.*

Sewage
Bailey Meter Co.*

Sight
Sight Light Corp.*

Special
American Met. Co., Inc.*
General Electric Co.*
General Inst. & Con. Co.
Pitts. Equit. Meter Co.*
Superior Meter Co., Inc.*
Union Water Meter Co.*
Weston Elec. Inst. Corp.*

Station
American Meter Co.*
Byram, H. F.
Weston Elec. Inst. Corp.*
Pitts. Equit. Meter Co.*

Steam
Amer. Dist. Steam Co.*
American Meter Co.*
Bailey Meter Co.*
Bristol Co.*
Builders Iron Foundry*
Cochrane Corp.*
Defender Auto. Reg. Co.*
Elgin Softener Corp.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Morey & Jones, Ltd.*
Republic Flow Met. Co.*
Water Wks. Supply Co.

Sulphur Dioxide
See Gas Analytical Meters, Sulphur Dioxide

Test
American Meter Co.*
Bailey Meter Co.*
Gordon Co., Claud S.
Morey & Jones, Ltd.*
Neptune Meter Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Superior Met. Co., Inc.*

Time
General Electric Co.*

Torsion
Cummings Mach. Wks.*
Gordon Co., Claud S.
Western Scientific Co.

Truck Recording
U. S. Recording Co.*

Venturi
Bailey Meter Co.*
Binckley, Geo. Sydney*
Brown Instrument Co.*
Builders Iron Foundry*
Cochrane Corp.*
Foxboro Co.*
General Inst. & Con. Co.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
International Filter Co.*
Kollsman Inst. Co., Inc.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pioneer Inst. Co.*
Refinery Supply Co.
Simplex V. & M. Co.*
U. S. Gauge Co.*
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.

V-Notch
Bailey Meter Co.*
Cochrane Corp.*
Morey & Jones, Ltd.*
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.
Yarnall-Waring Co.*

Volume Indicating
American Gas Fur. Co.*
American Meter Co.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Brown Instrument Co.*

METERS

Volume Indicating (Cont'd)
Builders Iron Foundry*
Foxboro Co.*
General Biol. [illegible]
General Inst. & Con. Co.
Greene Brothers, Inc.
Hersey Mfg. Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Neptune Meter Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.
Western Elec. Co., Inc.*

Waste Heat
Bailey Meter Co.*
Brown Instrument Co.*
Minn-HoneywellReg.Co.*

Water
Badger Met. Mfg. Co.*
Bailey Meter Co.*
Binckley, Geo. Sydney*
Bristol Co.*
Brown Instrument Co.*
Buffalo Meter Co.*
Builders Iron Foundry*
Cochrane Corp.*
Elgin Softener Corp.*
General Inst. & Con. Co.
Hersey Mfg. Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
National Meter Co.*
Neptune Meter Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Smith Mfg. Co., A. P.*
Union Water Meter Co.*
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.
Worthington Pump & M. Corp.*

Watt Hour
Bristol Co.*
Byram, H. F.
Ferranti Electric, Inc.*
General Electric Co.*
Landis & Gyr, Inc.*
Sangamo Elec. Co.*
Stan. Elec. Time Co.
WestinghouseE.&M.Co.*

Weir
Bailey Meter Co.*
Binckley, Geo. Sydney*
Builders Iron Foundry*
Cochrane Corp.*
Morey & Jones, Ltd.*
Simplex V. & M. Co.*
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.

METER STICKS
Lufkin Rule Co.*

MICRO-AMMETERS
Byram, H. F.
Central Scientific Co.
Chicago Apparatus Co.
Etna Electric Works*
Ferranti Electric, Inc.*
Hickok Elec. Inst. Co.*
Palo-Myers, Inc.
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.
Sticht & Co., H. H.*
Thermo Con. Dev., Inc.
Triplett Elec. Inst. Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*

MICRODENSIOMETERS
Gaertner Scien. Corp.*

MICRO-FARADMETERS
Biddle Co., James G.
Byram, H. F.
Gray Instrument Co.*
Hickok Elec. Inst. Co.*
Roller-Smith Co.*
Western Scientific Co.
Weston Elec. Inst. Corp.*

MICRO-MANIPULATOR
Bausch&LombOpt.Co.*
Hoffman Co., Sam. O.*

MICROMETERS
AmthorTest.Inst.Co.,Inc.
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
EmpireLab.Sup.Co.,Inc.
Ferner Co., R. Y.
Fisher Scientific Co.
Gaertner Scien. Corp.*
Haines Gauge Co.*
Howe & French, Inc.
Laboratory Materials Co.
Tavella Sales Co.
Leitz, Inc., E.
Lufkin Rule Co.*
Millers Falls Co.
Mine & Smelter Sup. Co.
N.Y. Lab. Sup. Co., Inc.
OlsenTest.Mach.Co.,T.*
Palo-Myers, Inc.
Reed Small Tool Wks.*
Sargent & Co., E. H.
Scherr Co., Geo.*
Scientific Glass App. Co.
Slocomb Co., J. T.*
Spencer Lens Co.*
Starrett Co., L. S.*
Testing Machines, Inc.*
Van Keuren Co.
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Zeiss, Inc., Carl

Calendar
Pre. Ther. & Inst. Co.*

Internal
Bath & Co., John*

MICROMETER LAPS
Van Keuren Co.*

MICROSCOPES
Central Scientific Co.
Macalaster Bicknell Co.
Mine & Smelter Sup. Co.
N.Y. Lab. Sup. Co., Inc.
Sargent & Co., E. H.
Steen, Erick F.
Testrite Inst. Co.*
Welch Mfg. Co., W. M.

Biological
Adams Co., Inc., Clay
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Braun Corp.
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Elliott Co., B. K.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Fuess, Inc., R.*
General Biol. Sup. House
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Leitz, Inc., E.*
N. J. Lab. Supply Co.
N. Y. Biol. Supply Co.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Refinery Supply Co.
Schaar & Co.
Spencer Lens Co.*
Stan. Scien. Sup. Corp.
Teltru Instrument Co.
Testing Machines, Inc.*
Walker&Co.,Inc.,G.T.
Warren-Knight Co.
Western Scientific Co.
Wilkens-Anderson Co.
Wollensak Optical Co.*
Zeiss, Inc., Carl

Brinell
Bausch&LombOpt.Co.*
Braun Corp.
Chicago Apparatus Co.
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Ferner Co., R. Y.
Fisher Scientific Co.
Fuess, Inc., R.*
Gaertner Scien. Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
OlsenTest.Mach.Co.,T.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Pitts. Inst. & Mach Co.*
Rascher & Betzold
Schaar & Co.
Spencer Lens Co.*
Steel City Test. Lab.
Testing Machines, Inc.*
Walker&Co. Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Finish Comparison
Scherr Co., George*

Inspection
Gaertner Scien. Corp.*

Measuring
Bausch&LombOpt.Co.*
Braun Corp.
CambridgeInst.Co.,Inc.*
Chicago Apparatus Co.*
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Ferner Co., R. Y.
Fuess, Inc., R.*
Gaertner Scien. Corp.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Howe & French, Inc.
Kern Co.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Schaar & Co.
Scherr Co., George*
Spencer Lens Co.*
Steel City Test. Lab.
Testing Machines, Inc.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Metallographic
Adams Co., Inc., Clay
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Braun Corp.
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Fisher Scientific Co.
Fuess, Inc., R.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Rascher & Betzold
Schaar & Co.
Spencer Lens Co.*
Steel City Test. Lab.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Petrographical
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Braun Corp.
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.

MICROSCOPES
Petrographical (Cont'd)
Daigger & Co., A.
Denver Fire Clay Co.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Fuess, Inc., R.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Schaar & Co.
Spencer Lens Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Thread Contour
Bausch&LombOpt.Co.
Scherr Co., George*

Toolmaker's
Bausch&LombOpt.Co.*
Braun Corp.
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Fuess, Inc., R.*
Gaertner Scien. Corp.*
Gilmore Drug Co., W. J.
Leitz, Inc., E.*
Palo-Myers, Inc.
Scherr Co., George*
Spencer Lens Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Wire Gaging
Scherr Co., George*

MICROSCOPE ACCESSORY INSTRUMENTS
Bausch&LombOpt.Co.*

MICROSCOPE ILLUMINATORS
Bausch&LombOpt.Co.*

MICROSCOPE SLIDES (Prepared)
Conant, Geo. H.*

MICROTOMES
Bausch&LombOpt.Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Fisher Scientific Co.
EmpireLab.Sup.Co.,Inc.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Howe & French, Inc.
International Equip. Co.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Leitz, Inc., E.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N. Y. Biol. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Sargent & Co., E. H.
Schaar & Co.
Spencer Lens Co.*
Stan. Scien. Sup. Corp.
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.

MICROVOLTMETERS
Ferris Inst. Corp.*

MILK TESTER
Heusser Inst. Mfg. Co.*

MILLIAMMETERS
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Byram, H. F.
Central Scientific Co.
Chicago Apparatus Co.
Clough-Brengle Co.*
Denver Fire Clay Co.
Esterline-Angus Co.*
Etna Electric Works*
Ferranti Electric, Inc.*
Gamewell Co.
General Electric Co.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Hickok Elec. Inst. Co.*
Kauffman-Lattimer Co.
LundquistT.&Mfg.Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
N.Y. Lab. Sup. Co., Inc.
Rawson Elec. Inst. Co.*
Reliance Inst. Co.*
Roller-Smith Co.*
Schaar & Co.
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.
Stan. Elec. Time Co.
Triplett Elec. Inst. Co.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.*
Western Elec. Co., Inc.
Western Scientific Co.
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

MILLIOHMMETERS
Shallcross Mfg. Co.*

MILLIVOLTMETERS
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Byram, H. F.
Central Scientific Co.
Chicago Apparatus Co.
Esterline-Angus Co.*
Etna Electric Works*
Ferranti Electric, Inc.*
General Electric Co.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.

MILLIVOLTMETERS (Cont'd)
Hickok Elec. Inst. Co.*
Kauffman-Lattimer Co.
Lewis Eng. Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
N.Y. Lab. Sup. Co., Inc.
Podbielniak Ind. Res. & Eng. Labs.
Pyrometer Inst. Co.*
Rawson Elec. Inst. Co.*
Refinery Supply Co.
Reliance Inst. Co.*
Roller-Smith Co.*
Schaar & Co.
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Triplett Elec. Inst. Co.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.*
Western Scientific Co.
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

MIRRORS
American Opt. Co.*
Bausch&LombOpt.Co.*
Glass Engraving Co.*
Rieker Inst. Co.*

Azimuth Circle
Hand & Sons Co., J. E.*
Kollmorgen Opt. Corp.*
Warren-Knight Co.

Galvanometer
Boehmke Opt. Co.*
Brown Instrument Co.*
Bryden Co.*
Fish-Schurman Corp.*
General Electric Co.*
Hellige, Inc.*
Minn-HoneywellReg.Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.

Octant
Bliss & Co., Inc., John
Gaertner Scien. Corp.*
Hand & Sons Co., J. E.
Kollmorgen Opt. Corp.*
Warren-Knight Co.
White Co., Inc., David*

Plano
Bausch&LombOpt.Co.*

Sextant
Bliss & Co., Inc., John
Fish-Schurman Corp.*
Gaertner Scien. Corp.*
Hand & Sons Co., J. E.
Kollmorgen Opt. Corp.*
Warren-Knight Co.
White Co., Inc., David*

Spherical Stellite
Bausch&LombOpt.Co.*

Stadimeter
Bliss & Co., Inc., John
Kollmorgen Opt. Corp.*
Warren-Knight Co.

MODULATION METERS
See Meters, Modulation

MOISTURE METERS
See Moisture Testing Apparatus

MOISTURE TESTING APPARATUS
Alpha-Lux Co., Inc.
Atlantic Pre. Inst. Co.*
Braun Corp.
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Dietert Co., Harry W.*
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.*
Exact Weight Scale Co.*
Fisher Scientific Co.
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Heil Chem. Co., Henry
Humboldt Mfg. Co.*
Laboratory Materials Co.
Lewis Eng. Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.*
Precision Scientific Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Scientific Glass App. Co.
Stan. Scien. Sup. Corp.
Sticht & Co., H. H.*
TagliabueMfg.Co.,C.J.*
Teltru Inst. Co.
Teschner-Quinn Corp.*
Testing Machines, Inc.*
Thwing Inst. Co.*
Toledo Scale Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.
Williams App. Co.*

MONOCHROMATIC LIGHT SOURCES
Gaertner Scientific Corp.*

MONOCHROMATORS
Bausch&LombOpt.Co.*
Bryden Co.*
Gaertner Scientific Corp.*

MOTION RECORDERS
See Recorders, Motion

MOTOR STARTERS
Allen-Bradley Co.*
Cutler-Hammer, Inc.*
Elec. Con. & Mfg. Co.*
Electric Spec. Co.
Mine & Smelter Sup. Co.
Roller-Smith Co.*
Stan. Elec. Time Co.
Struthers Dunn, Inc.*
Ward Leonard Elec. Co.*

MUD SCALES
See Scales, Mud

MULTIMETERS
Clough-Brengle Co.*
Rawson Elec. Inst. Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*

MULTIPLE PEN RECORDERS
See Recorders, Multiple Pen

MULTIPLIERS
Clough-Brengle Co.*
Daven Co.*
General Electric Co.*
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Stan. Elec. Time Co.
Weston Elec. Inst. Corp.*

NATURAL SCIENCE SUPPLIES
Ward's Nat. Scie. Est., Inc.*

NAUTICAL INSTRUMENTS
Hand & Sons Co., J. E.*

NAVAGATIONAL INSTRUMENTS
Sherman, L. A.

NEON TUBES
General Phys. Labs.*

NEPHELOMETERS
Akatos, Inc.
Aloe Co., A. S.
Braun Corp.
Central Scientific Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Eimer & Amend
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Heil Chemical Co., H.
Hellige, Inc.
Leitz, Inc., E.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Sargent & Co., E. H.
Schaar & Co.
Spencer Lens Co.*
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

NITROGEN DETERMINATION APPARATUS
Aloe Co., A. S.
Boekel & Co., Inc., W.*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Eimer & Amend
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Heil Chemical Co., H.
Howe & French, Inc.
Laboratory Materials Co.
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Precision Scientific Co.*
Racher & Betzold*
Sargent & Co., E. H.
Schaar & Co.
Scientific Glass App.Co.*
Standard Sci. Sup. Corp.
Teschner-Quinn Corp.
Walker & Co., Inc., G. T.
Western Scientific Co.
Welch Mfg. Co., W. M.
Wilkens-Anderson Co.

NOISE MEASURING SETS
Clough-Brengle Co.*
Commercial Eng. Labs.*
Fisher Scientific Co.
General Electric Co.*
General Radio Co.*
International Broad. Equip. Co.*
Tobe Deutschmann Corp*
United Sound Eng. Co.*
Western Elec. Co., Inc.*
Western Scientific Co.
WestinghouseE.&M.Co.*

NOZZLES
Flow
Bailey Meter Co.*

OCTANTS, NAVIGATING
Bliss & Co., Inc., John
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Warren-Knight Co.
White Co., Inc., David*

ODOMETERS
Barbour-Stockwell Co.*
Eimer & Amend*
Gurley, W. & L. E.
Ohmer Fare Reg. Co.*
Veeder Root, Inc.*
Warren-Knight Co.

OHMETERS
Biddle Co., James G.
Braun Corp.
Chicago Apparatus Co.
Clough-Brengle Co.*
Esterline-Angus Co.*
General Electric Co.*
Gray Instrument Co.*
Hickok Elec. Inst. Co.*
Leeds & Northrup Co.*
Mine & Smelter Sup. Co.
N. Y. Lab. Sup. Co., Inc.
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Sticht & Co., H. H.*
Thermo Con. Dev., Inc.
Triplett Elec. Inst. Co.*
Walker & Co., Inc., G. T.

OHMETERS (Cont'd)
Welch Mfg. Co., W. M.
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*

OIL TESTING INSTRUMENTS
American Inst. Co.*
Aloe Co., A. S.
American Trans. Co.*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Denver Fire Clay Co.
Doerr Glass Co., Inc.*
Eimer & Amend
EmpireLab.Sup.Co.,Inc.
Ferranti Electric, Inc.*
Fish-Schurman Corp.*
Fleischhauer & Son, Fr.*
Fisher Scientific Co.*
Friez & Sons, Inc., J. P.*
General Electric Co.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Heil Chemical Co., H.
Hickok Elec. Inst. Co.*
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Mine & Smelter Sup. Co.
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Pacific Scientific Co.
Palo-Myers, Inc.*
Podbielniak Ind. Res. & Eng. Labs.*
Precision Scientific Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Scientific Glass App. Co.
Sensitive Res. Inst. Co.*
Sperry Products, Inc.*
Standard Sci. Sup. Corp.
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.*
Olsen Test. Mach. Co., Tinius*
Visco Meter Corp.*
Walker & Co., Inc., G. T.
WestinghouseE.&M.Co.*
Wilkens-Anderson Co.

OPACIMETER
Bausch & Lomb Opt. Co.*

OPTICAL BENCHES
Bryden Co.*
Fuess, Inc., R.*
Gaertner Scientific Corp.*

OPTICAL FILTERS
Bausch & Lomb Opt. Co.*
Braun Corp.
Bryden Co.*
Central Scientific Co.
Elliott Co., B. K.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Fish-Schurman Corp.*
Fuess, Inc., R.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Kollmorgen Opt. Corp.*
Leitz, Inc., E.*
Marietta Apparatus Co.
Western Scientific Co.
Wilkens-Anderson Co.
Wollensak Optical Co.*
Zeiss, Inc., Carl*

OPTICAL FLATS
Mann Instrument Co.*

OPTICAL MICROMETERS
Bausch & Lomb Opt. Co.*

OPTICAL PARTS
American Opt. Co.*
Bausch & Lomb Opt. Co.*
Bryden Co.*
Central Scientific Co.
Elliott Co., B. K.
Fish-Schurman Corp.*
Fuess, Inc., R.*
Gaertner Scientific Corp.*
General Scientific Corp.*
Greene Brothers, Inc.
Hellige, Inc.*
Jones & Lamson Mach. Co.*
Kern Co.
Kollmorgen Opt. Corp.*
Leitz, Inc., E.*
Mann Instrument Co.*
Pfaltz & Bauer, Inc.
Rieker Instrument Co.*
Walker & Co., Inc., G. T.
Warren-Knight Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

OPTICAL SYSTEMS FOR SOUND REPRODUCTION
General Scientific Corp.*

OPTICAL TESTING INSTRUMENTS
Bausch & Lomb Opt. Co.*
Fuess, Inc., R.*

OPTIMETERS
Akatos, Inc.*
Marietta Apparatus Co.
Scherr Co., George*
White Co., Inc., David
Western Scientific Co.

ORDNANCE INSTRUMENTS
Arma Eng. Co., Inc.*

Fire Control Instruments
Warner & Swasey Co.*

ORIFICE METERS
See Meters, Orifice

ORIFICES
American Met. Co., Inc.*
Bailey Meter Co.*
Bristol Co.*
Cochrane Corp.*
Builders Iron Foundry*
General Inst. & Con. Co.
Greene Brothers, Inc.
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Thompson Grinder Co.*
Wallace & Tiernan Prod., Inc.*
Water Works Supply Co.
Worley Jewel Co., John*

Adjustable
American Meter Co.*
Bailey Meter Co.*
Eclipse Fuel Eng. Co.*
Foxboro Co.
General Inst. & Con. Co.
Meriam Co.*
Wallace & Tiernan Prod., Inc.*

ORSAT GAS APPARATUS
See Gas Analytical Meters, Orsat

ORTHO-TOLIDIN TESTING OUTFIT
Wallace & Tiernan Co., Inc.*

OSCILLATORS
Couch Co., Inc., S. H.*
Ferris Instrument Corp.*
General Radio Co.*
Hickok Elec. Inst. Co.*
Hoyt Elec. Inst. Works*
Leeds & Northrup Co.*
RCA Mfg. Co., Inc.*
Supreme Inst. Corp.*
Triplett Elec. Inst. Co.*
United Sound Eng. Co.*
Western Elec. Co., Inc.*
Western Scientific Co.
Weston Elec. Inst. Corp.*

Audio—Frequency
Braun Corp.
Clough-Brengle Co.*
Couch Co., Inc., S. H.*
Fish-Schurman Corp.*
General Electric Co.*
General Radio Co.*
Hickok Elec. Inst. Co.*
International Broad. Equip. Co.*
Leeds & Northrup Co.*
RCA Mfg. Co., Inc.*
Standard Elec. Time Co.*
United Sound Eng. Co.
Western Elec. Co., Inc.*

OSCILLOGRAPHS
Automatic
General Electric Co.*
General Radio Co.*
WestinghouseE.&M.Co.*

Cathode Ray
Batcher, Ralph R.*
Burt Sci. Labs., R. C.*
Chicago Apparatus Co.
Clough-Brengle Co.*
DuMont Labs., Allen B.*
General Electric Co.*
General Electron Corp.*
General Radio Co.*
International Broad. Equip. Co.
RCA Mfg. Co., Inc.*
Shallcross Mfg. Co.*
Supreme Inst. Corp.*
United Sound Eng. Co.*
Western Elec. Co., Inc.*
Western Scientific Co.
WestinghouseE.&M.Co.*
Zeiss, Inc., Carl

Duddell
Cambridge Inst. Co., Inc.*

OSCILLOSCOPES
Clough-Brengle Co.*

OUTPUT METERS
See Meters, Output

OXYGEN RECORDERS
See Recorders, Oxygen

OVENS
Crystal Oscillator
Premier Crys. Labs., Inc.*

Temperature
Premier Crys. Labs., Inc.*

OVER AND UNDER WEIGHT INDICATORS FOR BEAM SCALES
Buffalo Scale Co., Inc.*

OXYGEN & NITROGEN TESTING APPARATUS
Eimer & Amend*

PAINT, HIDING POWER CHARTS
Daigger & Co., A.*

PANELS
Instrument
Bailey Meter Co.*

PANTOGRAPHS
Bruning Co., Inc., C.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Kolesch & Co.
Post Co., Frederick*
Soltmann, Inc., E. G.*
Wade Instrument Co.
Warren-Knight Co.
Western Scientific Co.

PASSOMETER
Dietzgen Co., Eugene
Gurley, W. & L. E.
Scherr Co., George*
Warren-Knight Co.

PEDOMETER
Dietzgen Co., Eugene
Elliott Co., B. K.
Gurley, W. & L. E.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Warren-Knight Co.
Western Scientific Co.

PELLET PRESSES
Parr Instrument Co.*
PELORUSES
Bliss & Co., Inc., John*
Sherman, L. A.*
PENETROMETER NEEDLES
Humboldt Mfg. Co.*
PERFORMANCE METER
See Meter, Performance
PHASE ANGLE METERS
See Meters, Phase Angle
PERIODIC OPERATION MONITOR
Wallace & Tiernan Co., Inc.*
PERISCOPES
Bausch & Lomb Opt. Co.*
Kollmorgen Opt. Corp.*
Western Scientific Co.
Zeiss, Inc., Carl
PERMEAMETERS
Cambridge Inst. Co., Inc.*
General Electric Co.*
Leeds & Northrup Co.*
Rubicon Co.*
Welch Mfg. Co., W. M.*
PHOSPHATE CONTROL APPARATUS
Taylor&Co.,Inc.,W.A.*
PHOTO-ELECTRIC CELLS
Braun Corp.
Brown Instrument Co.*
Burt Sci. Labs., R. C.*
Chicago Apparatus Co.
Continental Electric Co.*
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Ess Instrument Co.
General Electric Vapor Lamp Co.
General Electron. Corp.*
General Scientific Corp.*
Gilmore Drug Co., W. J.
G-M Laboratories, Inc.*
Kauffman-Lattimer Co.
Kurman Electric Co.
Laboratory Materials Co.
McNeill Eng. Equip. Co., T. W.
Miles Repro. Co., Inc.*
Minn-HoneywellReg.Co.*
M-R-H Labs.
Rhamstine, J. Thos.*
Standard Elec. Time Co.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Elec. Co., Inc.*
Western Scientific Co.
WestinghouseE.&M.Co.*
Weston Elec. Inst., Corp.*
PHOTO-ELECTRIC COLOR ANALYZERS
Central Scientific Co.*
Elgin Softener Corp.*
General Electric Co.*
Gilmore Drug Co., W. J.
Kauffman-Lattimer Co.
M-R-H Labs.*
Paragon Electric Co.*
Rawson Elec. Inst. Co.*
Thwing Inst. Co.*
Wallace & Tiernan Prod., Inc.*
Watts Elec. Con., Inc.*
Western Scientific Co.
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*
PHOTO-ELECTRIC COLOR COMPARATORS
Aloe Co., A. S.*
American Inst. Co.*
Electronic Products Co.*
Elgin Softener Corp.*
Ess Instrument Co.*
General Radio Co.*
Gilmore Drug Co., W. J.
Hays Labs.*
Hellige, Inc.*
Kauffman-Lattimer Co.
McNeill Eng Equip. Co., T. W.
Paragon Electric Co.*
Rawson Elec. Inst. Co.*
Walker & Co., Inc., G. T.
Wallace & Tiernan Prod., Inc.*
Watts Elec. Con., Inc.*
Western Scientific Co.
Weston Elec. Inst. Corp.*
PHOTOGRAPHIC EXPOSURE METERS
See Meters, Photographic Exposure
PHOTOLASTICITY POLARISCOPE
Gaertner Scientific Corp.*
PHOTOMETERS
Akatos, Inc.
Bausch & Lomb Opt. Co.*
Central Scientific Co.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J.
Gray Instrument Co.*
Marietta Apparatus Co.
Sargent & Co., E. H.
Welch Mfg. Co., W. M.*
Zeiss, Inc., Carl
Balance
Leeds & Northrup Co.*
Munsell Color Co., Inc.*
Bar
Leeds & Northrup Co.*
Candle
Braun Corp.
Chicago Apparatus Co.
Connelly I. S. & G. Co.*
Ferranti Electric, Inc.*
Fisher Scientific Co.*
Greiner Co., Emil
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Sight Light Corp.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Illumination
Leeds & Northrup Co.*
Reflection
Leeds & Northrup Co.*

PHOTOMETERS
Sphere
Leeds & Northrup Co.*
Ultra-Violet
Burt Sci. Labs., R. C.*
PHOTO-MICROGRAPHIC EQUIPMENT
Clay Adams Co., Inc.
Aloe Co., A. S.
American Askania Corp.
Bausch & Lomb Opt. Co.*
Braun Corp.
Chicago Apparatus Co.
Elliott Co., B. K.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Fish-Schurman Corp.*
Fuess, Inc., R.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Spencer Lens Co.*
Standard Sci. Sup. Corp.
Steel City Test. Lab.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl
PHYSICAL TESTING MACHINES
See Testers and Testing Machines
PIEZOMETER
Consolidated Ashcroft Hancock Co., Inc.*
Hersey Mfg. Co.
PIPE LOCATORS
Clark Co., H. W.*
Globe Phone Co.*
PIPETTE
Aloe Co., A. S.
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Denver Fire Clay Co.
Doerr Glass Co., Inc.*
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.*
Fisher Scientific Co.*
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Griebel Inst. Co., Inc.*
Heil Chemical Co., H.
Howe & French, Inc.
Kauffman-Lattimer Co.
Kimble Glass Co.*
Laboratory Materials Co.
Luertzing Glass Inst. Co.*
Macalaster Bicknell Co.*
Machlett & Son, E.
MilwaukeeGlassWks.,Inc.
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N. Y. Biological Sup. Co.
N. Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Refinery Supply Co.
Sargent & Co., E. H.
Scientific Glass App. Co.
Standard Sci. Sup. Corp.*
Steel, Erick F.*
Teschner-Quinn Corp.*
Walker & Co., Inc., G. T.
Western Scientific Co.
Wilkens-Anderson Co.
Williams Apparatus Co.*
PISTOL BARREL OPTICAL TESTERS
Fuess, Inc., R.*
PITOT TUBE METERS
Bacharach Ind. Inst. Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Defender Auto. Reg. Co.*
Friez & Sons, Inc., J. P.*
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Jensen Instrument Co.
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Pitometer Log Corp.*
Refinery Supply Co.
Simplex Val. & Met. Co.*
Teltru Instrument Co.*
Water Works Supply Co.
PITOT TUBES
American Blower Corp.
American Meter Co.*
Bacharach Ind. Inst. Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Defender Auto. Reg. Co.*
Ellison Draft Gage Co.*
Fish-Schurman Corp.*
Foxboro Co.
Friez & Sons, Inc., J. P.*
Fuess, Inc., R.
General Inst. & Con. Co.
Greiner Co., Emil*
Jensen Instrument Co.
Kollsman Inst. Co., Inc.*
Macalaster Bicknell Co.*
Meriam Co.*
Morey & Jones, Ltd.*
N. Y. Lab. Sup. Co., Inc.
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Refinery Supply Co.
Republic Flow MetersCo.*
Simplex Val. & Met. Co.*
Teltru Instrument Co.*
Walker & Co., Inc., G. T.
Water Works Supply Co.
PLANE TABLES
Berger&Sons,Inc.,C.L.*

PLANETARIUM
Eastern Sci. Sup. Co.*
PLANETARY CONFIGURATION APPARATUS
Eastern Sci. Sup. Co.*
PLANIMETERS
Bruning Co., Inc., C.
Buff & Buff Mfg. Co.*
Curtin & Co., Inc., W. H.
Dietzgen Co., Eugene
Elliott Co., B. K.
Gurley, W. & L. E.
Robertson, 3rd, Jas. L.*
Trill Indicator Co.*
Wallace & Tiernan Prod., Inc.
Warren-Knight Co.
White Co., Inc., David
Automatic Flow Record
Brown Instrument Co.*
Minn-HoneywellReg.Co.*
Post Co., Frederick
Linear
Bacharach Ind. Inst. Co.
Crosby S. G. & V. Co.
Eitzen Co., Louis C.
General Inst. & Con. Co.
Kolesch & Co.
Post Co., Frederick
Radial
American Meter Co.*
Bailey Meter Co.*
Builders Iron Foundry
General Inst. & Con. Co.
Post Co., Frederick
Square Root
American Meter Co.*
Binckley, George Sydney*
General Inst. & Con. Co.
Post Co., Frederick
PLUMB BOB
See Bob, Plumb
POLARIZING PLATES
Polarized Products Co.*
POLARIMETERS
Akatos, Inc.
Braun Corp.
Central Scientific Co.
Daigger & Co., A.
Eimer & Amend
Elliott Co., B. K.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J.
Kauffman-Lattimer Co.
Mine & Smelter Sup. Co.
Palo-Myers, Inc.
Sargent & Co., E. H.
Schaar & Co.
Teschner-Quinn Corp.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl
POLARISCOPES
Aloe Co., A. S.
American Opt. Co.*
Bausch & Lomb Opt. Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.*
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Denver Fire Clay Co.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.
Gaertner Scientific Corp.*
General Electron. Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Heil Chemical Co., H.
Howe & French, Inc.
Kauffman-Lattimer Co.
Leitz, Inc., E.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Sargent & Co., E. H.
Schaai & Co.
Teschner-Quinn Corp.
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl
POLARISCOPE TUBES
Eimer & Amend*
POLISHING MACHINE
Wilkens-Anderson Co.*
PORCELAIN
Coors Porcelain Co.*
POROUS WARE FOR ELECTROLYSIS
Coors Porcelain Co.*
POSITION RECORDERS
See Recorders, Position
POTENTIAL DETECTORS
General Electric Co.*
Littelfuse Labs.*
Roller-Smith Co.*
Schweitzer&Conrad,Inc.*
Wilkens-Anderson Co.
POTENTIOMETERS
Indicating
American Gas Fur. Co.
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Cambridge Inst. Co., Inc.*
Central Scientific Co.
Curtin & Co., Inc., W. H.
Denver Fire Clay Co.
Eimer & Amend
Fisher Scientific Co.
Foxboro Co.*
General Electric Co.*
Gordon Co., Claud S.
Gray Instrument Co.*
Greene Brothers, Inc.
Hellige, Inc.*
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Lewis Engineering Co.*
Minn-HoneywellReg.Co.*
N. J. Lab. Supply Co.
Pacific Scientific Co.

POTENTIOMETERS
Indicating (Cont'd)
Podbielniak Ind. Res. & Eng. Labs.
Refinery Supply Co.
Rubicon Co.*
Sargent & Co., E. H.
Schaar & Co.
Sensitive Res. Inst. Co.*
Sticht & Co., H. H.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Thwing Instrument Co.*
Walker & Co., Inc., G. T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Recording & Controlling
American Gas Fur. Co.
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Instrument Co.*
Curtin & Co., Inc., W. H.
Denver Fire Clay Co.
Foxboro Co.*
Gordon Co., Claud S.
Greene Brothers, Inc.
Leeds & Northrup Co.*
Lewis Engineering Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Podbielniak Ind. Res. & Eng. Labs.
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Walker & Co., Inc., G. T.
Western Scientific Co.
POWER FACTOR METERS
See Meters, Power Factor
POWER FACTOR REGULATORS
See Regulators, Power Factor
POWER-LEVEL INDICATORS
General Radio Co.*
PRECESSION OF EQUINOXES DEMONSTRATOR
Eastern Scien. Sup. Co.*
PRECISION-BORE GLASS TUBING
Fish-Schurman Corp.*
PRESSURE RECORDERS
See Recorders, Pressure
PRESSURE SNUBBERS
Ray Pressure Snubber Co., Inc.*
PRISMS
American Opt. Co.*
Bausch&LombOpt.Co.*
Boehmke Opt. Co.*
Bryden Co.*
Central Scientific Co.
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Ferner Co., R. Y.
Fish-Schurman Corp.*
Fuess, Inc., R.*
Gaertner Scientific Corp.*
General Scientific Corp.*
Hellige, Inc.*
Kauffman-Lattimer Co.
Kern Co.
Kollmorgen Opt. Corp.*
Machlett & Son, E.*
Palo-Myers, Inc.
Rieker Inst. Co.*
Spencer Lens Co.*
Walker&Co.,Inc.,G.T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
White Co., Inc., David
Wilkens-Anderson Co.
Zeiss, Inc., Carl
PROCESS TIMING INSTRUMENTS
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Cramer&Co.,Inc.,R.W.
Edison, Inc., Thos. A.*
Gaertner Scientific Corp.*
General Electric Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Paragon Electric Co.*
Stromberg Elec. Co.*
TagliabueMfg.Co.,C.J.*
Leland Elec. Co.*
PROCESS TIMING & SIGNALING INSTRUMENTS
Auto. Lighting Co.*
Bailey Meter Co.*
Bristol Co.*
Brown Instrument Co.*
Edison, Inc., Thos. A.*
Ess Inst. Co.*
Gamewell Co.*
General Elec. Co.*
H-B Inst. Co., Inc.*
Holtzer-Cabot Elec. Co.*
Leland Elec. Co.*
Minn-HoneywellReg.Co.*
Paragon Elec. Co.*
Stromberg Elec. Co.*
TagliabueMfg.Co.,C.J.*
Wallace & Tiernan Products, Inc.*
Walser Auto. Timer Co.*
Western Elec.-Mech. Co., Inc.*
Cin. Time Rec. Co.*
Cramer&Co.,Inc.,R.W.
Edison, Inc., Thos. A.
General Inst. & Con. Co.
Holtzer-Cabot Elec. Co.*
Johnson Service Co.*
Leeds & Northrup Co.*
Leland Electric Co.*
Paragon Elec. Co.*
Stan. Elec. Time Co.*
Stromberg Elec. Co.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*

PROPORTIONATING DEVICES
Permutit Co.*
PROTRACTORS
American Opt. Co.*
Bruning Co., Inc., Chas.
Central Scientific Co.
Gurley, W. & L. E.
Kern Co.
Pioneer Inst. Co., Inc.*
Post Co., Frederick
Welch Mfg. Co., W. M.
Bevel
Bausch&LombOpt.Co.*
Dietzgen Co., Eugene*
Elliott Co., B. K.
Lufkin Rule Co.*
Millers Falls Co.*
Post Co., Frederick
Scherr Co., George*
Union Tool Co.*
Warren-Knight Co.
White Co., Inc., David
Course
Sherman, L. A.*
Level
Dietzgen Co., Eugene*
Scherr Co., George*
Union Tool Co.*
Warren-Knight Co.*
White Co., Inc., David*
Navigator's
Bliss & Co., Inc., John
Hand & Sons Co., J. E.*
Warren-Knight Co.*
White Co., Inc., David*
Transparent
Bliss & Co., Inc., John
Dietzgen Co., Eugene*
Elliott Co., B. K.
Hand & Sons Co., J. E.*
Kolesch & Co.
Warren-Knight Co.*
Western Scientific Co.
White Co., Inc., David*
PROVERS
American Met. Co., Inc.*
Pitts. Equit. Meter Co.*
Superior Met. Co., Inc.*
PSYCHOLOGY LABORATORY APPARATUS
Stoelting Co., C. H.*
PSYCHROMETERS
EmpireLab.Sup.Co.,Inc.
Fuess, Inc., R.*
Gray Inst. Co.*
Mine & Smelter Sup. Co.
Welch Mfg. Co., W. M.*
Electric Aspirating
Friez&Sons,Inc.,J.P.*
Recording
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Chicago Apparatus Co.
Con. Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Dickson Co.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
GeneralInst.&Con.Co.*
Green, Henry J.*
Greene Brothers, Inc.
Howe & French, Inc.
Johnson Service Co.
Kauffman-Lattimer Co.
Lewis Eng. Co.*
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Refinery Supply Co.
Scien. Glass App. Co.
TagliabueMfg.Co.,C.J.*
Taylor Instrument Cos.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.*
Weksler Ther. Corp.*
Sling
Braun Corp.
Brown Instrument Co.*
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Eimer & Amend
Foxboro Co.
Friez&Sons,Inc.,J.P.*
General Inst. & Con. Co.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil
H-B Inst. Co., Inc.*
Howe & French, Inc.
Huddleston, J. S. F.*
Jensen Inst. Co.
Johnson Service Co.*
Kauffman-Lattimer Co.
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Pacific Scientific Co.
Palo-Myers, Inc.*
Pre. Ther. & Inst. Co.*
Refinery Supply Co.
Schaar & Co.*
Schultheis Corp., E. W.*
Scien. Glass App. Co.
Scientific Inst. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teltru Inst. Co.*
Walker&Co.,Inc.,G.T.
Warren-Knight Co.
Western Scientific Co.
Wilkens-Anderson Co.
PUBLIC HEALTH TESTING EQUIPMENT
Aloe Co., A. S.*
PULSATION DAMPER
Martin-Decker Co.*
PYCNOMETERS
Braun Corp.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
General Elec. Co.*
Green Brothers, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.

PYCNOMETERS (Cont'd)
Macalaster Bicknell Co.*
Mine & Smelter Sup. Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Rascher & Betzold, Inc.
Sargent & Co., E. H.
Schaar & Co.
Scien. Glass App. Co.
Teschner-Quinn Corp.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
PYRHELIOMETERS
Engelhard, Inc., Chas.*
Eppley Lab., Inc.*
Leeds & Northrup Co.*
PYROMETER CALIBRATING SETS
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
EmpireLab.Sup.Co.,Inc.
General Inst. & Con. Co.
Greene Brothers, Inc.
Leeds & Northrup Co.*
Lewis Eng. Co.*
McNeill Eng. Equip. Co., T. W.
Minn-HoneywellReg.Co.*
Pacific Scientific Co.*
Rubicon Co.*
Sargent & Co., E. H.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.
PYROMETERS
Expansion
Bailey Meter Co.*
Brown Inst. Co.*
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
General Inst. & Con. Co.
Greene Brothers, Inc.
Minn-HoneywellReg.Co.*
Scientific Inst. Co.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,G.T.
Lewis Eng. Co.*
Indicating (for grain elevators)
Zeleny Ther. Co.*
Optical
BacharachInd.Inst.Co.
Braun Corp.
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Denver Fire Clay Co.
Eimer & Amend
Fisher Scientific Co.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Industrial Pyro. Co.*
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.*
Pyrometer Inst. Co.*
Sargent & Co., E. H.
Schaar & Co.
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.
Pneumatic
Bailey Meter Co.*
Gordon Co., Claud S.
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,G.T.
Potentiometric
American Gas Fur. Co.
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Curtin&Co.,Inc.,W.H.
Denver Fire Clay Co.
Foxboro Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Leeds & Northrup Co.*
Lewis Eng. Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Rubicon Co.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.
Radiation-Indicating
BacharachInd.Inst.Co.*
Braun Corp.
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Defender Auto. Reg. Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Industrial Pyro. Co.*
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pyrometer Inst. Co.*
Schaar & Co.
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Radiation-Recording
BacharachInd.Inst.Co.*
Braun Corp.
Brown Inst. Co.*
Defender Auto. Reg. Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pyrometer Inst. Co.*
Schaar & Co.
Thermo Con. Dev., Inc.
Thwing Inst. Co.*

PYROMETERS (Cont'd)

Resistance
American Gas Fur. Co.
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Eimer & Amend
Eitzen Co., Louis C.
Foxboro Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Illinois Test. Labs., Inc.*
Jensen Inst. Co.
Kauffman-Lattimer Co.
Leeds & Northrup Co.*
Lewis Eng. Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Rubicon Co.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

Thermo-Electric
Commercial Eng. Labs.
Eimer & Amend
Eitzen Co., Louis C.
Heil Chem. Co., Henry

Thermo-Electric—Immersion
Bailey Meter Co.*
Brown Inst. Co.*
Dickson Co.*
Engelhard, Inc., Chas.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Illinois Test. Labs., Inc.*
Industrial Pyrometer Co.*
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pyrometer Inst. Co.*
Roller-Smith Co.*
Sargent & Co., E. H.
Schaar & Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.

Thermo-Electric—Indicating
American Gas Fur. Co.
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Byram, H. F.
Denver Fire Clay Co.
Dickson Co.*
Engelhard, Inc., Chas.*
Etna Electric Works*
Fisher Scientific Co.
Foxboro Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Illinois Test. Labs., Inc.*
Industrial Pyrometer Co.*
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Palo-Myers, Inc.
Pyrometer Inst. Co.*
Rawson Elec. Inst. Co.*
Refinery Supply Co.
Roller-Smith Co.*
Sargent & Co., E. H.
Schaar & Co.
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev. Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.
Weston Elec. Inst. Corp.*

Thermo-Electric—Recording & Controlling
American Gas Fur. Co.
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Byram, H. F.
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Dickson Co.*
Engelhard, Inc., Chas.*
Fisher Scientific Co.
Foxboro Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pyrometer Inst. Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Taylor Inst. Cos.*
Walker&Co.,Inc.,G.T.

Thermo-Electric—Surface Contact
Bristol Co.*
CambridgeInst.Co.,Inc.*
Dickson Co.*
Engelhard, Inc., Chas.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Illinois Test. Labs., Inc.*
Leeds & Northrup Co.*
Lewis Eng. Co.*
Pacific Scientific Co.
Pyrometer Inst. Co.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.

PYROMETRIC CONES
Accurate Pyro. Cone Co.*

RADIO BEACON SYNCHRONIZING CONTROLLERS
Wallace & Tiernan Co., Inc.*

RADIO FREQUENCY OSCILLATORS
Clough-Brengle Co.*
Ferris Inst. Corp.*
General Radio Co.*
Gilmore Drug Co., W. J.
Hickok Elec. Inst. Co.*
Hoyt Elec. Inst. Wks.*
Inter. Broad. Equip. Co.*
Prem.CrystalLabs.,Inc.*
RCA Mfg. Co., Inc.*
Supreme Inst. Corp.*
Triplett Elec. Inst. Co.*
United Sound Eng. Co.*
Western Elec. Co., Inc.*
Weston Elec. Inst. Corp.*
Zeiss, Inc., Carl

RADIOGRAPH
Western Scientific Co.

RADIOMETER
Central Scientific
Chicago Apparatus Co.
Heil Chem. Co., Henry
Hoffman Co., Sam. O.*
Laboratory Materials Co.
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.

RADIO-MICROMETERS
Roller-Smith Co.*
Western Scientific Co.

RADIO REMOTE CONTROL SYSTEMS
Wallace & Tiernan Co., Inc.*

RADIOSCOPES
Braun Corp.
Laboratory Materials Co.
Welch Mfg. Co., W. M.
Western Scientific Co.

RADIO SET ANALYZERS
Clough-Brengle Co.*
DuMont Labs., A. B.*
Hickok Elec. Inst. Co.*
Hoyt Elec. Inst. Wks.*
Shallcross Mfg. Co.*
Supreme Inst. Corp.*
Triplett Elec. Inst. Co.*
Weston Elec. Inst. Corp.*

RADIO TEST PANELS
Clough-Brengle Co.*
General Electron. Corp.*
Hickok Elec. Inst. Co.*
Rawson Elec. Inst. Co.*
Shallcross Mfg. Co.*
Weston Elec. Inst. Corp.*

RADIO TUBE CHECKERS
Clough-Brengle Co.*
General Electron. Corp.*
Hickok Elec. Inst. Co.*
Hoyt Elec. Inst. Wks.*
Lundquist Tool & Mfg Co.*
Supreme Inst. Corp.*
Triplett Elec. Inst. Co.*
Weston Elec. Inst. Corp.*

RAINFALL RECORDERS
See Recorder, Rainfall

RAIN GAGE
See Gages, Rain

RANGE FINDING INSTRUMENTS
Warner & Swasey Co.*
Bausch&LombOpt.Co.*
Bliss & Co., Inc., John
Fuess, Inc., R.
Kern Co.
Kollmorgen Opt. Corp.*
Leitz, Inc., E.*
Wallace & Tiernan Products, Inc.*
Warren-Knight Co.*
Western Scientific Co.
White Co., Inc., David
Zeiss, Inc., Carl

RANGE POLES
Leatherman Co., C. M.*

READING LENSES
Thermometer and Burette
Parr Inst. Co.*

RECORDERS
Air Distance
Bailey Meter Co.*
Brown Inst. Co.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Refinery Supply Co.
Republic Flow Met. Co.*
Thermo Con. Dev., Inc.

Barometer
Bliss & Co., Inc., John
Bristol Co.*
Elliott Co., B. K.
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.
Green, Henry J.*
Greene Brothers, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Pacific Scientific Co.
Pre. Ther. & Inst. Co.
Refinery Supply Co.
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Uehling Inst. Co.*
Western Scientific Co.

Barometric Pressure
Friez&Sons,Inc.,J.P.*

Carbon Dioxide
See Gas Analytical Meters, Carbon Dioxide

Chemical Density
CambridgeInst.Co.,Inc.*
General Inst. & Con. Co.
Leeds & Northrup Co.*
Thermo Con. Dev., Inc.

Combustion
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Braun Corp.
Brown Inst. Co.*
Bullard Co., E. D.
Curtin&Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Ess Inst. Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Hays Corp.*
Mine Safety App. Co.*
Minn-HoneywellReg.Co.*

RECORDERS
Combustion (Cont'd)
Permutit Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
Thermo Con. Dev., Inc.

Condenser Leakage
Esterline-Angus Co.*

Demand
American Meter Co.*
Bailey Meter Co.
Brown Inst. Co.*
Esterline-Angus Co.*
General Electric Co.*
Landis & Gyr, Inc.
Minn-HoneywellReg.Co.*
Pitts. Equit. Met. Co.*
Thermo Con. Dev., Inc.
WestinghouseE.&M.Co.

Depth
Bailey Meter Co.*
Bristol Co.*
Builders Iron Foundry*
Hand & Sons Co., J. E.*
Henschel&Co.,Inc.,C.J.*
International Filter Co.*
Refinery Supply Co.
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*

Differential Pressure
American Meter Co.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Cochrane Corp.*
Con. Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Foxboro Co.*
Fuess, Inc., R.
Hays Corp.*
International Filter Co.*
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*

Draft
BacharachIndInst.Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Bristol Co.*
Brown Inst. Co.*
Con. Ashcroft-Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
Greene Brothers, Inc.
Hays Corp.*
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pre. Ther. & Inst. Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Thermo Con. Dev., Inc.
Uehling Inst. Co.*
Walker&Co.,Inc.,G.T.

Freeness
Green, Arthur B.*

Gravity
Bailey Meter Co.*
Binckley, George Sydney*
General Inst. & Con. Co.
Greene Brothers, Inc.
Hays Corp.*
Permutit Co.*
Pre. Ther. & Inst. Co.
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.

Humidity
Amthor Test. Inst. Co., Inc.
Atlantic Pre. Inst. Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Con. Ashcroft Hancock Co., Inc.*
Denver Fire Clay Co.
Dickson Co.*
Eimer & Amend
Elliott Co., B. K.
Fee and Stemwedel, Inc.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.*
General Inst. & Con. Co.
H-B Inst. Co., Inc.
Johnson Service Co.
Leeds & Northrup Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Pacific Scientific Co.
Parks-Cramer Co.
Practical Inst. Co.*
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Testing Machines, Inc.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.

KVA
Esterline-Angus Co.*

Liquid Level
American Meter Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Bunnell & Co., J. H.*

RECORDERS
Liquid Level (Cont'd)
Burt Sci. Labs., R. C.*
CambridgeInst.Co.,Inc.*
Cochrane Corp.*
Con. Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Dickson Co.*
Electric Tach. Corp.*
Ess Inst. Co.*
Esterline-Angus Co.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.
General Inst. & Con. Co.
Greene Brothers, Inc.
Gurley, W. & L. E.*
International Filter Co.*
Leeds & Northrup Co.*
Leupold, Volpel & Co.*
Liquidometer Corp.*
McNeill Eng. Equip. Co., T. W.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Parks, Jr., Harry S.*
Paragon Electric Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Republic Flow Met. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Uehling Inst. Co.*
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.

Motion
Bailey Meter Co.*
Bristol Co.*
Builders Iron Foundry*
Dickson Co.*
Dwyer Mfg. Co., F. W.
Esterline-Angus Co.*
Foxboro Co.*
General Electric Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Ohmer Fare Reg. Co.*
Pacific Scientific Co.
Pitts. Taximeter Co.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*

Multiple Pen
American Askania Corp.
Automatic Elec. Co.*
Bailey Meter Co.*
Braun Corp.*
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Con. Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
Curtin&Co.,Inc.,W.H.
Denver Fire Clay Co.
Dickson Co.*
Esterline-Angus Co.*
Foxboro Co.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.*
Podbielniak Ind. Res. & Eng. Labs.
RepublicFlowMetersCo.*
TagliabueMfg.Co.,C.J.*
U. S. Gauge Co.*
Western Scientific Co.

Operation
Amthor Test. Inst. Co., Inc.*
BakerIceMach.Co.,Inc.
Bristol Co.*
Brown Inst. Co.*
Con. Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
Dickson Co.*
Esterline-Angus Co.*
Friez&Sons,Inc.,J.P.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Holtzer-Cabot Elec. Co.*
McDonnell Odometer Co.*
Minn-HoneywellReg.Co.*
Ohmer Fare Reg. Co.*
Pacific Scientific Co.
Practical Inst. Co.*
Refinery Supply Co.
Roller-Smith Co.*
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.

Oxygen
Bailey Meter Co.*
CambridgeInst.Co.,Inc.*
Hays Corp.*
Cutler-Hammer, Inc.*
Greene Brothers, Inc.
Hays Corp.*
Leeds & Northrup Co.*
Refinery Supply Co.
Walker&Co.,Inc.,G.T.

Position
BacharachInd.InstCo.*
Bailey Meter Co.*
Boston Auto Gage Co.*
Builders Iron Foundry*
Elec. Tachometer Corp.*
Esterline-Angus Co.*
General Elec. Co.*
Leeds & Northrup Co.*
Pacific Scientific Co.
Shallcross Controls, Inc.*
Wallace & Tiernan Products, Inc.*

Power Factor
Esterline-Angus Co.*
Thermo Con. Dev., Inc.
WestinghouseE.&M.Co.*

Pressure
American Met. Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Baldwin-Southwark Corp*

RECORDERS
Pressure (Cont'd)
Binckley, George Sydney*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry
Com. Eng. Labs.*
Con. Ashcroft Hancock Co., Inc.*
Crosby Steam G. & V. Co.*
Curtin&Co.,Inc.,W.H.
Cutler-Hammer, Inc.*
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Dickson Co.*
Esterline-Angus Co.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Hays Corp.*
Hydraulic Press Mfg. Co.
Leeds & Northrup Co.*
Marsh Corp., Jas. P.*
Martin-Decker Corp.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
National Gauge Corp.*
Parks, Jr., Harry S.*
Pitts. Equit. Meter Co.*
Pre. Ther. & Inst. Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Star Brass Mfg. Co.*
Steel City Test. Lab.
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Uehling Inst. Co.*
U. S. Gauge Co.*
Wallace & Tiernan Products, Inc.*

Power-Factor
General Elec. Co.*

Rain
Friez&Sons,Inc.,J.P.*
Leupold, Volpel & Co.*

Specific Gravity
American Meter Co.*
Bailey Meter Co.*
Binckley, George Sydney*
General Inst. & Con. Co.
Greene Brothers, Inc.
Greiner Co., Inc., O. R.*
Hays Corp.*
Pacific Scientific Co.
Permutit Co.*
Pre. Ther. & Inst. Co.
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,G.T.

Speed
Amthor Test. Inst. Co., Inc.*
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Com. Eng. Labs.*
Con. Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
Cummings Machine Wks.*
Denver Fire Clay Co.
Elec. Tachometer Corp.*
Esterline-Angus Co.*
Friez&Sons,Inc.,J.P.*
Gaertner Scientific Corp.*
General Elec. Co.*
General Inst. & Con. Co.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Ohmer Fare Reg. Co.*
Pacific Scientific Co.
Pitts. Taximeter Co.*
Roller-Smith Co.*
Stover-Lang Co.*
Thermo Con. Dev., Inc.
U. S. Fare Rec. Co.*
Veeder Root, Inc.*
Welch Mfg. Co., W. M.
Zernickow Co.*

Strain-Time
Baldwin-Southwark Corp.*

Stress-Strain
Baldwin-Southwark Corp.*

Sulphur Dioxide
See Meters, Sulphur Dioxide

Sunshine
CambridgeInst.Co.,Inc.*
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.*
General Elec. Co.*
General Inst. & Con. Co.
Green, Henry J.*
Leeds & Northrup Co.*
Pacific Scientific Co.
Taylor Inst. Cos.*
Western Scientific Co.
White Co., Inc., David*

Surge
Esterline-Angus Co.*
General Electric Co.*

Temperature
See Pyrometers and Thermometers

Time
Automatic Elec. Co.*
Bristol Co.*
Calculagraph Co.*
Cin. Time Rec. Co.*
Con. Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
Curtin&Co.,Inc.,W.H.
Dickson Co.*
Elec. Tachometer Corp.*
Esterline-Angus Co.*
Foxboro Co.*
Friez&Sons,Inc.,J.P.*
General Elec. Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
H-B Inst. Co., Inc.
Howard Clock Co., E.*

RECORDERS
Time (Cont'd)
McDonnell Odometer Co.*
Ohmer Fare Reg. Co.*
Morse Mag. Clock Co.*
Pacific Scientific Co.
Parche Time Stamp Co.*
Pitts. Taximeter Co.*
Refinery Supply Co.
Service Rec. Co.*
Simplex Time Rec. Co.*
Stan. Elec. Time Co.
Stromberg Elec. Co.*
TagliabueMfg.Co.,C.J.*
Teletouch Corp.*
Thermo Con. Dev., Inc.
U. S. Recording Co.*
Western Scientific Co.
Service Recorder Co.*

Time Operation
BakerIceMach.Co.,Inc.
Bristol Co.*
Calculagraph Co.*
Cin. Time Rec. Co.*
Con. Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
Curtin&Co.,Inc.,W.H.
Dickson Co.*
Elec. Tachometer Corp.*
Esterline-Angus Co.*
Friez&Sons,Inc.,J.P.*
Gordon Co., Claud S.
Greene Brothers, Inc.
Holtzer-Cabot Elec. Co.*
Howard Clock Co., E.*
McDonnellOdometerCo.*
Mine & Smelter Sup. Co.
Morse Mag. Clock Co.*
Ohmer Fare Reg. Co.*
Pacific Sci. Co.
Parche Time Stamp Co.*
Refinery Supply Co.
Roller-Smith Co.*
Service Rec. Co.*
Simplex Time Rec. Co.*
TagliabueMfg.Co.,C.J.*
Teletouch Corp.*
U. S. Recording Co.*

Truck Mileage
U. S. Recording Co.*

Truck, Time
U. S. Recording Co.*

Truck, Time & Mileage
U. S. Recording Co.*

Vacuum
Amer. Meter Co., Inc.*
BacharachInd.Inst.Co.*
Bailey Meter Co.*
Binckley, George Sydney*
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry
Con. Ashcroft Hancock Co., Inc.*
Crosby Steam G. & V. Co.*
Curtin&Co.,Inc.,W.H.
Defender Auto. Reg. Co.*
Denver Fire Clay Co.
Dickson Co.*
Esterline-Angus Co.*
Foxboro Co.*
General Inst. & Con. Co.
Greene Brothers, Inc.
Leeds & Northrup Co.*
Marsh Corp., Jas. P.*
Mine & Smelter Sup. Co.
Minn-HoneywellReg.Co.*
Pre. Ther. & Inst. Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Star Brass Mfg. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Uehling Inst. Co.*
U. S. Gauge Co.*
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.*
Scientific Inst. Co.*

Vehicle Travel
Service Recorder Co.*

Wind Direction and Velocity
Friez&Sons,Inc.,J.P.*

REFLECTORS
Aspherical, Concave, First Surface, Heat Resisting, Parabolic, Spherical, Stellite
Bausch&LombOpt.Co.*

REFLECTOMETER
Akatos, Inc.*

REFRACTOMETERS
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Daigger & Co., A.
Curtin&Co.,Inc.,W.H.
Eimer & Amend
Fisher Scientific Co.
Fuess, Inc., R.*
Gilmore Drug Co., W. J.
Greiner Co., Emil
Heil Chem. Co., Henry
Kauffman-Lattimer Co.
Mine & Smelter Sup. Co.
Palo-Myers, Inc.
Podbielniak Ind. Res. & Eng. Labs.
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Spencer Lens Co.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

REFLEXIONMETER
Eimer & Amend*

REGULATORS

Air
American Askania Corp.*
American Meter Co.*
Amer. Meter Co., Inc.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Bastian Blessing Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
Builders Iron Foundry*
Cash Co., A. W.*
Davis Reg. Co.*
D'Este Co., Julian*
Ess Inst. Co.*
Fisher Governor Co.*
Foster Eng. Co.*
Friez&Sons,Inc.,J.P.*
Fulton Sylphon Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hoke, Inc.*
Holzapfel Inst. Co.*
McAlear Mfg. Co.*
Minn-HoneywellReg.Co.*
Nat. Airoil Burner Co.*
Pitts. Equit. Meter Co.*
Plouff Co.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
R-S Prod. Corp.*
Schutte & Koerting Co.*
Shallcross Controls, Inc.*
Smith Welding Equip. Corp.*
Smoot Eng. Corp.*
Watts Reg. Co.*
Western Scientific Co.
Wilkens-Anderson Co.

Atmospheric
Reynolds Gas Reg. Co.*

Blower
American Askania Corp.*
Arca Regulators, Inc.*
Cook Elec. Co.*
D'Este Co., Julian*
Brooke Eng. Co., Inc.*
Eclipse Fuel Eng. Co.*
Fisher Governor Co.*
Foster Eng. Co.*
Friez&Sons,Inc.,J.P.*
Plouff Co.*
Shallcross Controls, Inc.*
Smoot Eng. Corp.*
Spencer Reg. Co.*
Spencer Thermostat Co.*

Boiler
American Askania Corp.*
Arca Regulators, Inc.*
Bailey Meter Co.*
Brooke Eng. Co., Inc.*
Fisher Governor Co.*
Foster Eng. Co.*
Friez&Sons,Inc.,J.P.*
Greene Brothers, Inc.
Hoffman Spec. Co., Inc.*
McAlear Mfg. Co.*
Plouff Co.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
Shallcross Controls, Inc.*
Smoot Eng. Corp.*
Spencer Reg. Co.*
Spencer Ther. Co.*
Wilgus Mfg. Co.*

Compressed Gas
American Meter Co.*
American Askania Corp.*
Arca Regulators, Inc.*
Bastian Blessing Co.*
Brooke Eng. Co., Inc.*
Builders Iron Foundry*
Davis Reg. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hoke, Inc.*
Holzapfel Inst. Co.*
Pitts. Equit. Meter Co.*
Plouff Co.*
Schutte & Koerting Co.*
Smith Welding Equip. Corp.*
Smoot Eng. Corp.*
Wallace & Tiernan Products, Inc.*
Western Scientific Co.
Wilgus Mfg. Co.*

Condensation
American Askania Corp.*
Arca Regulators, Inc.*
Davis Reg. Co.*
Fisher Governor Co.*
Foster Eng. Co.*
Friez&Sons,Inc.,J.P.*
Greene Brothers, Inc.
McAlear Mfg. Co.*

Consistency (Paper & Pulp)
Green, Arthur B.*
Merritt Eng. & Sales Co., Inc.*

Cooler
American Askania Corp.*
Arca Reg., Inc.*
Edison, Inc., Thos. A.*
Friez&Sons,Inc.,J.P.*
Penn Elec. Switch Co.*

Draft
American Askania Corp.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
Carrick Eng. Co.*
Cash Co., A. W.*
Ess Inst. Co.*
Fisher Governor Co.*
Friez&Sons,Inc.,J.P.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hays Corp.*
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Nat. Airoil Burner Co.*
Plouff Co.*
Powers Reg. Co.*
Refinery Supply Co.
R-S Prod. Corp.*
Shallcross Controls, Inc.*

REGULATORS
Draft (Cont'd)
Sheer Co., H. M.*
Smoot Eng. Corp.*
Spencer Reg. Co.*
Wilgus Mfg. Co.*

Drying Chamber
American Askania Corp.*
Arca Reg., Inc.*
Brown Inst. Co.*
Con. Ashcroft Hancock Co., Inc.*
Fulton Sylphon Co.*
Lawler Auto. Con., Inc.*
Minn-HoneywellReg.Co.*

Electrical
American Askania Corp.*
Cutler-Hammer, Inc.*
Davis Reg. Co.*
Detroit Lubricator Co.*
Edison, Inc., Thos. A.*
Ferranti Elec., Inc.*
Friez&Sons,Inc.,J.P.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
H-B Inst. Co., Inc.*
Ward Leonard Elec. Co.*
Palo-Myers, Inc.*
Paragon Elec. Co.*
Roller-Smith Co.*
Shallcross Controls, Inc.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.

Feed Water
American Askania Corp.*
Atwood & Morrill Co.
Bailey Meter Co.*
Brown Inst. Co.*
Con. Ashcroft Hancock Co., Inc.*
Eclipse Fuel Eng. Co.*
Foster Eng. Co.*
Fulton Sylphon Co.*
Greene Brothers, Inc.
Lawler Auto. Con., Inc.*
McAlear Mfg.. Co.*
Mercon Reg. Co.*
Minn-HoneywellReg.Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Refinery Supply Co.
Smoot Eng. Corp.*
TagliabueMfg.Co.,C.J.*
Watts Reg. Co.*

Flow
American Askania Corp.*
Arca Reg., Inc.*
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Brooke Eng. Co., Inc.*
Builders Iron Foundry*
Davis Reg. Co.*
Foster Eng. Co.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hoke, Inc.*
Holzapfel Inst. Co.*
International Filter Co.*
Klipfel Mfg. Co.*
Lawler Auto Con., Inc.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
Shallcross Controls, Inc.*
Smoot Eng. Corp.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*

Flow Proportioning
Schutte & Koerting Co.*

Fluid Proportioning
Mercon Reg. Co.*

Furnace
American Askania Corp.*
American Gas Fur. Co.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bristol Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
BurgessLabs.,Inc.,C.F.*
Carrick Eng. Co.*
Cash Co., A. W.*
Cook Elec. Co.*
Defender Auto. Reg. Co.*
Dickson Co.*
Eclipse Fuel Eng. Co.*
Edison, Inc., Thos. A.*
Ess Inst. Co.*
Friez&Sons,Inc.,J.P.*
FultonSylphon Co.*
General Controls Co.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Hagan Corp.*
Hays Corp.*
Jensen Inst. Co.
McAlear Mfg. Co.*
Minn-HoneywellReg.Co.*
Paragon Elec. Co.*
Penn Elec. Switch Co.*
Pitts. Equit. Meter Co.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
R-S Prod. Corp.*
Sheer Co., H. M.*
Spencer Reg. Co.
Spencer Therm. Co.*
Shallcross Con., Inc.*
Thermo Con. Dev., Inc.
Wilbin Inst. Corp.*
Wilkens-Anderson Co.

Gas
American Askania Corp.*
American Meter Co.*
Arca Reg., Inc.*
Bastian Blessing Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*

REGULATORS
Gas (Cont'd)
Connelly Iron Sponge & Gov. Co.*
Eclipse Fuel Eng. Co.*
Fisher Governor Co.*
Friez&Sons,Inc.,J.P.*
Greene Brothers, Inc.
Greiner Co., Emil
General Con. Co.
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Hagan Corp.*
Jensen Inst. Co.
McAlear Mfg. Co.*
Minn-HoneywellReg.Co.*
Partlow Corp.*
Penn Elec. Switch Co.*
Pitts. Equit. Meter Co.*
Powers Reg. Co.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
Schutte & Koerting Co.*
Shallcross Con., Inc.*
Smith Welding Equip. Corp.*
Smoot Eng. Corp.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*
Wilgus Mfg. Co.*
Wilkens-Anderson Co.

Heat
American Askania Corp.*
AmericanGasFurnaceCo.*
Arca Reg. Inc.*
Brown Inst. Co.*
Burling Inst. Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Cook Electric Co.*
Detroit Lub. Co.*
Dickson Co.*
Edison,Inc.,Thom. A.*
Friez&Sons.,Inc.JulienP.*
Fulton Sylphon Co.*
Gen. Inst. & Con. Co.
Greene Brothers, Inc.
Jensen Inst. Co.
Lawler Auto. Con., Inc.*
McAlear Mfg. Co.*
Minn.-HoneywellReg.Co.*
Palo-Myers Inc.*
Paragon Elec. Co.*
Power Reg. Co.*
Sarco Co., Inc.*
Sheer Co., H. M.*
Spencer Reg. Co.
Spencer Thermostat Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Devices,Inc.
Walker&Co.,Inc.,Geo.T.
Wilbin Inst. Corp.*
Wilkens-Anderson Co.

Humidity
American Askania Corp.*
Arca Reg., Inc.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Detroit Lub. Co.*
Friez&Sons,Inc.,JulienP.*
Greene Bros., Inc.
H-B Inst. Co., Inc.*
Lewis Air Cond., Inc.*
Minn.-Honeywell Reg.Co.*
Paragon Elec. Co.*
Parks-Cramer Co.*
Penn Elec. Switch Co.*
Powers Reg. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Co's.*
Thermo Con.Devices, Inc.*
Western Scientific Co.
Wilbin Inst. Corp.*

Hydraulic Pressure
American Askania Corp.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
Cash Co., A. W.*
Consolidated Ashcroft Hancock Co., Inc.*
Davis Reg. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Gilmore Drug Co., W. J.
Greene Bros., Inc.
Hydraulic Press Mfg.Co.*
Klipfel Mfg. Co.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Pitts. Equitable Met. Co.*
Plouff Co.*
Smoot Eng. Corp.*
Spencer Reg. Co.*
Tagiabue Mfg. Co., C. J.*
Taylor Inst Co's.*
Thermo Con. Devices, Inc.
Water Works Supply Co.
Wilgus Mfg. Co.*

Liquid Level
American Askania Corp.*
American Meter Co.,Inc.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Cash Co., A. W.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc.,W. H.
D'Este Co., Julian*
Detroit Lub. Co.*
Davis Reg. Co.*
Elec. Con. & Mfg. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Gen. Inst. & Con. Co.
Greene Bros., Inc.
International Filter Co.*
Klipfel Mfg. Co.*
Lawler Auto. Con., Inc.*

REGULATORS
Liquid Level (Cont'd)
McAlear Mfg. Co.*
McNeill Eng. Equip. Co., T. W.
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Morey & Jones, Ltd.*
Northern Equip. Co.*
Paragon Elec. Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Refinery Supply Co.
Shallcross Con., Inc.*
Smoot Eng. Corp.*
Tagliabue Mfg. Co., C. J.*
Taylor Inst. Co's.*
Thermo. Con. Devices,Inc.
Wallace & Tiernan Prod., Inc.*

Oil Feed
Nat. Airoil Burner Co.*

Power Factor
Watts Elec. Con., Inc.*

Pressure
American Askania Corp.*
American Meter Co.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Bastian Blessing Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
Cash Co., A. W.*
Connelly Iron Sponge & Gov. Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Curtin & Co., Inc., W.H.
Davis Reg. Co.*
D'Este Co., Julian*
Detroit Lubricator Co.*
Dickson Co.*
Emerson Appar. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Fox Eng. Co.*
Friez&Sons Inc.,JulienP.*
Fulton Sylphon Co.*
Gen. Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Bros., Inc.
Hagan Corp.*
Hoke, Inc.*
Holzapfel Inst. Co.*
Hydraulic Press Mfg.Co.*
Jensen Inst. Co.
Klipfel Mfg. Co.*
Marsh Corp., Jas. P.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Pitts. Equitable Met.Co.*
Plouff Co.*
Powers Reg. Co.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
Shallcross Controls, Inc.*
Smith Weld.Equip.Corp.*
Smoot Engi. Corp.*
Spencer Reg. Co.*
Spencer Ther. Co.*
Tagliabue Mfg. Co.,C. J.*
Taylor Inst. Co's.*
Thermo Con.Devices,Inc.*
Wallace & Tiernan Prod., Inc.*
Watts Reg. Co.*

Pump
American Askania Corp.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Brown Inst. Co.*
Cash Co., A. W.*
Consolidated Ashcroft Hancock Co., Inc.*
Davis Reg. Co.*
D'Este Co., Julian*
Fisher Gov. Co.*
Ford Reg. ValveCo.,Inc.*
Foster Eng. Co.*
Greene Bros., Inc.
Hydraulic Press Mfg. Co.*
Jensen Inst. Co.
Klipfel Mfg. Co.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Smoot Eng. Corp.*
Tagliabue Mfg. Co., C. J.*
Thermo Con. Devices,Inc.
Watts Reg. Co.*

Refrigeration
American Askania Corp.*
Arca Reg., Inc.*
Baker Ice Machine Co., Inc.*
Braun Corp.
Brown Inst. Co.*
Cash Co., A. W.*
Detroit Lubricator Co.*
Dickson Co.*
Edison, Inc., Thom. A.*
Fisher Gov. Co.*
Friez&Sons,Inc.,JulienP.*
Fulton Sylphon Co.*
Jensen Inst. Co.
Minn.-Honeywell Reg.Co.*
Paragon Elec. Co.*
Penn Elec. Switch Co.*
Pitts. Equitable Met.Co.*
Refinery Supply Co.
Refrigerating Spec. Co.*
Reynolds Gas Reg. Co.*
Tagliabue Mfg. Co., C. J.*
Thermo Con. Devices, Inc.

Safety Fuel Shut-Off
Spencer Ther. Co.*

Speed
American Ther. Co.*
Arca Reg., Inc.*
Brown Inst. Co.*
Cutler-Hammer, Inc.*
Electric Spec. Co.*

REGULATORS
Speed (Cont'd)
Hagan Corp.*
Ward Leonard Elec. Co.*
Merritt Eng. & Sales Co., Inc.*
Minn-Honeywell Reg. Co.*
Ohmer Fare Reg. Co.*
Ohmite Mfg. Co.*
Smoot Eng. Cor.*
U. S. Recording Co.*
Welch Mfg. Co., W. M.

Steam
American Askania Corp.*
American Met. Co., Inc.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Cash Co., A. W.*
Consolidated Ashcroft Hancock Co., Inc.*
Davis Reg. Co.*
Defender Auto. Reg. Co.*
D'Este Co., Julian*
Eclipse Fuel Eng. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Friez&Sons,Inc.,JulienP.*
Fulton Sylphon Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hagan Corp.*
Klipfel Mfg. Co.*
Lawler Auto. Con., Inc.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Plouff Co.*
Refinery Supply Co.
Robertson 3rd, Jas. L.
Shallcross Con., Inc.*
Smoot Eng. Corp.*
Tagliabue Mfg. Co., C. J.*
Taylor Inst. Co's.*
Thermo Con. Devices,Inc.

Steam Pressure
American Askania Corp.*
American Meter Co.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brooke Eng. Co., Inc.*
Brown Inst. Co.*
Builders Iron Foundry*
Carrick Eng. Co.*
Cash Co., A. W.*
Consolidated Ashcroft Hancock Co., Inc.*
Davis Regulator Co.*
Defender Auto. Reg. Co.*
D'Este Co., Julian*
Detroit Lubricator Co.*
Eclipse Fuel Eng. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Fulton Sylphon Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hagan Corp.*
Klipfel Mfg. Co.*
Marsh Corp., Jas. P.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Plouff Co.*
Powers Reg. Co.*
Refinery Supply Co.
Shallcross Con., Inc.*
Smoot Eng. Corp.*
Spencer Regulator Co.*
Spencer Ther. Co.*
Tagliabue Mfg. Co., C.J.*
Taylor Inst. Co's.*
Thermo Con. Devices,Inc.
Watts Reg. Co.*

Temperature
See Controls, Automatic—
Pyrometer, Thermometer,
Thermostat, etc.

Time
See Controls, Automatic, Time

Vacuum
American Askania Corp.*
Amperite Corp.*
Arca Reg., Inc.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Cash Co., A. W.*
Consolidated Ashcroft Hancock Co., Inc.*
Davis Reg. Co.*
Defender Auto. Reg. Co.*
D'Este Co., Julian*
Detroit Lub. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Fulton Sylphon Co.*
Gilmore Drug Co., W. J.
General Elec. Co.*
Greene Brothers, Inc.
Holzapfel Inst. Co.*
Jensen Inst. Co.
Klipfel Mfg. Co.*
Marsh Corp., Jas. P.*
McAlear Mfg. Co.*
Mercon Reg. Co.*
Minn.-Honeywell Reg.Co.*
Northern Equip. Co.*
Penn Elec. Switch Co.*
Pitts. Equitable Met.Co.*
Plouff Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Refinery Supply Co.
Reynolds Gas Reg. Co.*
Shallcross Con., Inc.*
Tagliabue Mfg. Co., C.J.*
Taylor Inst. Co's.*
Thermo Con. Devices,Inc.

REGULATORS
Vacuum (Cont'd)
Wallace & Tiernan Products, Inc.*
Western Scientific Co.

Viscosity
MerrittEng.&Sales Co.*

Voltage
American Askania Corp.*
Amperite Corp.*
Bristol Co.*
Brown Inst. Co.*
Elec. Specialty Co.*
Gilmore Drug Co., W. J.
Ward Leonard Elec. Co.*
Minn.-Honeywell Reg.Co.*
Raytheon Mfg. Co.*
Roller-Smith Co.*
Tagliabue Mfg. Co., C. J.*
Thermo Con. Devices, Inc.
Triplett Elec. Inst. Co.*
Wallace & Tiernan Co., Inc.*

Water
American Askania Corp.*
Arca Reg., Inc.*
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Davis Reg. Co.*
D'Este Co., Julian*
Eclipse Fuel Eng. Co.*
Fisher Gov. Co.*
Foster Eng. Co.*
Friez&Sons,Inc.,JulienP.*
Fulton Sylphon Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hagan Corp.*
International Filter Co.*
Klipfel Mfg. Co.*
Lawler Auto. Con., Inc.*
McAlear Mfg. Co.*
Minn.-Honeywell Reg.Co.*
Mercon Reg. Co.*
Pitts. Equitable Met.Co.*
Plouff Co.*
Refinery Supply Co.
Schuette & Koerting Co.*
Shallcross Con., Inc.*
Smoot Eng. Corp.*
Tagliabue Mfg. Co., C. J.*
Thermo Con. Devices,Inc.
Wallace & Tiernan Products, Inc.*

Water Pressure
American Askania Corp.*
Arca Reg., Inc.*
Atwood & Morrill Co.*
Bailey Meter Co.*
Bristol Co.*
Brown Inst. Co.*
Cash Co., A. W.*
Con. Ashcroft Hancock Co., Inc.*
Davis Reg. Co.*
D'Este Co., Julian*
Fisher Gov. Co.*
Foster Eng. Co.*
Ford Reg. ValveCo.,Inc.*
Friez&Sons,Inc.,JulienP.*
Fulton Sylphon Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hagan Corp.*
Klipfel Mfg. Co.*
McAlear Mfg. Co.*
Minn.-Honeywell Reg.Co.*
Mercon Reg. Co.*
Northern Equip. Co.*
Pitts. Equitable Met.Co.*
Plouff Co.*
Refinery Supply Co.
Schutte & Koerting Co.*
Shallcross Con., Inc.*
Smoot Eng. Corp.*
Tagliabue Mfg. Co., C. J.*
Taylor Inst. Co's.*
Thermo Con. Devices,Inc.
Union Water Met. Co.*
Wallace & Tiernan Products, Inc.*
Water Works Supply Co.
Watts Reg. Co.*

Welding
American Askania Corp.*
Bastian Blessing Co.*
Hoke, Inc.*
Plouff Co.*
Smith Weld.Equip.Corp.*

RELAYS

American Meter Co.,Inc.*
Boston Auto Gage Co.*
Bunnell & Co., J. H.*
Byram, H. F.
Central Scientific Co.
Connecticut Telephone & Elec. Corp.*
Etna Elec. Works*
Gamewell Co.*
Hart Mfg. Co.*
Howard Clock Co., E.*
Kellogg Switch & Supply Co.*
Leach Relay Co.*
Lewis Eng. Co.*
Mercoid Corp.*
Miles Rep. Co., Inc.*
Penn Elec. Switch Co.*
Podbielniak Ind. Res. & Eng. Labs.
Precision Ther. &Inst.Co.
Reliance Inst. Co.*
Signal Eng. & Mfg. Co.*
Thermo Con. Devices,Inc.
Walker & Co.,Inc.,Geo.T.
Welch Mfg. Co., W. M.

Auto
Niehoff & Co., C. E.*

Circuit Control
Leach Relay Co.*

Continuous Current
Hart Mfg. Co.*

Control
Friez&Sons,Inc.,JulienP.*

Electro-Magnet Movable Coil A. C.
Etna Elec. Works*

Heavy Duty
Automatic Switch Co.*

RELAYS (Cont'd)
Instrument Controlled
Signal Eng. & Mfg. Co.*
Struthers Dunn, Inc.*
Light Sensitive
American Inst. Co.*
Chicago Apparatus Co.
Defender Auto. Reg. Co.*
Electronic Prod. Co.*
Ess Inst. Co.*
General Elec. Co.*
Gen. Electronics Corp.*
Greiner Co., Emil
H-B Inst. Co., Inc.
Hickok Elec. Inst. Co.*
Kurman Elec. Co.*
Leach Relay Co.*
Paragon Elec. Co.*
Rhamstine, J. Thos.*
Roller-Smith Co.*
Triplett Elec. Inst. Co.*
Ward Leonard Elec. Co.*
Weston Elec. Co., Inc.*
Western Scientific Co.
Westinghouse E.&M.Co.*
Weston Elec. Inst. Corp.*
Magnetic
Eagle Signal Corp.*
Hart Mfg. Co.*
Roller-Smith Co.*
Standard Elec. Time Co.*
Mercury
Leland Elec. Co.*
Mercury Tube
Hart Mfg. Co.*
Motor Driven Time Delay
Ward Leonard Elec. Co.*
Overload
Allen-Bradley Co.*
Permanent Magnet Movable Coil
Etna Elec. Works*
Photoelectric
G-M Lab's., Inc.*
Weston Elec. Inst. Corp.*
Polarized
L. A. B. Corporation*
Struthers Dunn, Inc.*
Power
Weston Elec. Inst. Corp.*
Power Factor
Landis & Gyr, Inc.*
Resonance Type
Precision Ther.&Inst.Co.*
Wallace & Tiernan Co., Inc.*
Sensitive
Weston Elec. Inst. Corp.*
Telephone Auxiliary Ringing
Signal Eng. & Mfg. Co.*
Thermal Time Delay
Ward Leonard Elec. Co.*
Allen-Bradley Co.*
Time Delay
Weston Elec. Inst. Corp.*
Transformer (Low Voltage)
Mercoid Corp.*
Vacuum Contact
American Inst. Co.*
H-B Inst. Co., Inc.
Burling Inst. Co.
Defender Auto. Reg. Co.*
Edison, Inc., Thos. A.*
Electronic Prod. Co.*
General Elec. Co.*
Greiner Co., Emil
Ward Leonard Elec. Co.*
Struthers Dunn, Inc.*
Wallace & Tiernan Products, Inc.*
Western Scientific Co.
Wilkens-Anderson Co.
Vacuum Tube
American Inst. Co.*
Amperite Corp.*
Bailey Meter Co.*
Brown Inst. Co.*
Burling Inst. Co.
Central Sci. Co.*
Defender Auto. Reg. Co.*
Edison, Inc., Thos. A.*
Electronic Prod. Co.*
General Elec. Co.*
Greiner Co., Emil
H-B Inst. Co., Inc.
Lewis Eng. Co.*
McNeill Eng. Equip. Co.
Minn.-HoneywellReg.Co.*
Struthers Dunn, Inc.*
Ward Leonard Elec. Co.*
Western Elec. Co., Inc.*
Western Scientific Co.
Westinghouse E.&M.Co.*

REMOTE METERING EQUIPMENT
see Telemeters

RESISTANCE LOADING EQUIPMENT
Eastern Specialty Co.*

RESISTANCES
Biddle Co., James G.
Bunnell & Co., J. H.*
Central Scientific Co.*
Clough-Brengle Co.*
Crowley & Co.,Inc.,H.L.*
Cutler-Hammer, Inc.*
Daven Co.*
Eastern Specialty Co.*
General Radio Co.*
Gilmore Drug Co., W. J.
Hardwick, Hindle, Inc.*
Leeds & Northrup Co.*
Ward Leonard Elec. Co.*
Marion Elec. Mfg. Co.*
Meter Devices Co.*
Ohmite Mfg. Co.*
Palo-Myers, Inc.
Roller-Smith Co.*
Rubicon Co.*
Sargent & Co., E. H.
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Standard Elec. Time Co.
Sticht & Co.,HermanH.*
Thermo Con. Devices,Inc.
Triplett Elec. Inst. Co.*
Welch Mfg. Co., W. M.*
Western Elec. Co., Inc.*
Western Scientific Co.

RESISTANCE (Cont'd)
Resistors
Central Scientific Co.*
Clough-Brengle Co.*
Crowley & Co.,Inc.,H.L.*
Cutler-Hammer, Inc.*
Daven Co.*
Eastern Specialty Co.*
General Radio Co.*
Greiner Co., Emil
Hardwick, Hindle, Inc.*
Leeds & Northrup Co.*
Ward Leonard Elec. Co.*
Ohmite Mfg. Co.*
Roller-Smith Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Standard Elec. Time Co.
States Co.*
Struthers Dunn, Inc.*
Thermo Con. Devices,Inc.
Triplett Elec. Inst. Co.*
Welch Mfg. Co., W. M.*
Western Elec. Co., Inc.*
Western Scientific Co.
Westinghouse E.&M.Co.*
Weston Elec. Inst. Corp.*
White Dental Mfg. Co., S. S.*
Current Limiting
Schweitzer &Conrad,Inc.*

REVOLUTION COUNTER
see Counter, Revolution

RHEOSTATS
Biddle Co., James G.
Braun Corp.
Brown Inst. Co.*
Central Sci. Co.*
Chicago App. Co.*
Curtin&Co. Inc. W.H
Cutler-Hammer, Inc.*
Daven Co.*
Electric Spec. Co.
Empire Lab.Sup.Co.,Inc.*
Gamewell Co.*
General Radio Co.*
Gilmore Drug Co., W. J.
G-M Laboratories, Inc.*
Greiner Co., Emil
Hardwick, Hindle, Inc.*
Minn.-Honeywell Reg.Co.*
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Ohmite Mfg. Co.*
Palo-Myers, Inc.
Podbielniak Ind. Res. & Eng. Laboratories
Ward Leonard Elec. Co.*
Machlett & Son, E.*
Refinery Supply Company
Rubicon Co.*
Sargent & Co., E. H.
Standard Elec. Time Co.
Standard Sc. Sup. Corp.
Walker & Co.,Inc.,Geo.T.
Welch Mfg. Co., W. M.*
Western Elec. Co., Inc.*
Western Scientific Co.
Wilkens-Anderson Co.
Battery Charging
Allen-Bradley Co.*
Ward Leonard Elec. Co.*
Field
Cutler-Hammer, Inc.*
Elec. Con. & Mfg. Co.*
Elec. Specialty Co.
General Elec. Co.*
Ward Leonard Elec. Co.*
Mine & Smelter Sup. Co.
Rubicon Co.*
Standard Elec. Time Co.
Laboratory
Allen-Bradley Co.*
Meter Testing
Allen-Bradley Co.*
Slide Wire
Ward Leonard Elec. Co.*

RIDE RECORDERS
Impact Register Co.*
Fuess, Inc., R.

RULES
Adjustable Curve
Bruning Co., Inc., Chas.
Dietzgen Co., Eugene
Elliott Co., B. K.
Kolesch & Co.
Post Co., Frederick*
Soltmann, Inc., E. G.*
Wade Inst. Co.*
Warren-Knight Co.
White Co., Inc., David
Aluminum
Lufkin Rule Co.*
Brass
Lufkin Rule Co.*
Caliper
Union Tool Co.*
Drafting Room
Bruning Co., Inc., Chas.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Kolesch & Co.
Post Co., Frederick*
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Wade Inst. Co.*
Walker & Co., Inc., Geo. T.
Warren-Knight Co.
White Co., Inc., David
Fathom
Moeller Inst. Co., Inc.*
Folding
Bruning Co., Inc., Chas.
Dietzgen Co., Eugene
Elliott Co., B. K.
Lufkin Rule Co.*
N. J. Lab. Supply Co.
Post Co., Frederick*
Soltmann, Inc., E. G.*
Warren-Knight Co.
White Co., Inc., David
Glass
Glass Engr. Co.*
Mann Inst. Co.*
Parallel
Bliss & Co., Inc., John
Bruning Co., Inc., Chas.
Dietzgen Co., Eugene*

RULES
Parallel (Cont'd)
Elliott Co., B. K.
Hand & Sons Co., J.E.*
Kolesch & Co.
Post Co., Frederick*
Soltman, Inc., E. G.*
Warren-Knight Co.*
White Co., Inc., David
Shrinkage
Lufkin Rule Co.*
Slide
Aloe Co., A. S.
Braun Corp.
Bruning Co., Inc., Chas.
Central Scien. Co.
Chicago Apparatus Co.*
Curtin & Co., Inc.,W.H.
Denver Fire Clay Co.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Empire Lab. Sup.Co.,Inc.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Gurley, W. & L. E.
Howe & French, Inc.
Kaufman-Lattimer Co.
Kern Co.
Kolesch & Co.
Laboratory Mat. Co.
Landis & Gyr, Inc.
N. J. Lab. Supply Co.
Post Co., Frederick*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Scien. Glass App. Co.
Soltmann, Inc., E. G.*
Tavella Sales Co.*
Walker & Co.,Inc.,Geo.T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Scientific Co.
White Co., Inc., David
Wilkens-Anderson Co.
Steel
Bruning Co., Inc., Chas.
Chicago Apparatus Co.
Dietzgen Co., Eugene
Elliott Co., B. K.
Gaertner Scientific Corp.*
Howe & French, Inc.
Lufkin Rule Co.*
Millers Falls Co.*
N. J. Lab. Supply Co.
Post Co., Frederick*
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Union Tool Co.*
Warren-Knight Co.
White Co., Inc., David
Wilkins-Anderson Co.
Wood
Lufkin Rule Co.*

SACCHARIMETERS
Akatos, Inc.
Aloe Co., A. S.
Berg Mfg. Co., James*
Braun Corp.
Bausch & LombOpt.Co.*
Central Scientific Co.
Chicago Apparatus Co.
Curtin & Co., Inc., W. H.
Daigger & Co., A.
Empire Lab. Sup.Co.,Inc.
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Inc., OttoR.
Griebel Inst. Co., Inc.*
H-B Inst. Co., Inc.*
Heil Chemical Co., Henry
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Kimble Glass Co.*
Laboratory Mat. Co.
Milwaukee Glass Works, Inc.
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Precision Ther.&Inst.Co.*
Sargent & Co., E. H.
Schaar & Co.
Scientific Inst. Co.*
Schultheis Corp., E. W.*
Scientific Glass App.Co.*
Standard Sci. Sup. Corp.
Tagliabue Mfg. Co., C. J.*
Taylor Inst. Co's.*
Teschner-Quinn Corp.
Wagner & Son., Carl H.*
Walker & Co.,Inc.,Geo.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkins-Anderson Co.

SACCHROMETERS
Bauer Ther. Co., Inc.*
Braun Corp.
Central Scientific Co.
Chicago Apparatus Co.
Daigger & Co., A.
Empire Lab. Sup.Co.,Inc.
Fleischhauer&Sons,Fr.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., OttoR.
Griebel Inst. Co., Inc.*
Hiergesel & Sons, Wm.*
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Jensen Inst. Co.
Mine & Smelter Sup. Co.
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Pacific Scientific Co.
Precision Ther.&Inst.Co.*
Sargent & Co., E. H.
Schaar & Co.
Scientific Inst. Co.*
Schultheis Corp., E. W.*
Scien. Glass App. Co.*
Standard Sci. Sup. Corp.
Tagliabue Mfg. Co., C. J.*
Taylor Inst. Co's.*

SACCHROMETERS (Cont'd)
Teschner-Quinn Corp.
Testrite Inst. Co.*
Wagner & Son., Carl H.*
Weiss & Son, Albert A.*
Welch Mfg. Co., W. M.
Western Sci. Co.
Wilkens-Anderson Co.

SALINOMETERS
Bauer Ther. Co., Inc.*
Braun Corp.
Curtin & Co., Inc.,W.H.
Empire Lab. Sup.Co.,Inc.
Fleischhauer & Son, Fr.*
Gilmore Drug Co., W. J.
Gray Inst. Co.*
Greene Brothers, Inc.
Greiner Co., Emil*
Griebel Inst. Co., Inc.*
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.
Howe & French, Inc.
Jensen Inst. Co.
Kimble Glass Co.*
Mine & Smelter Sup. Co.
Moeller Inst. Co., Inc.*
N. J. Lab. Supply Co.
Pacific Sci. Co.
Palo-Myers, Inc.
Precision Ther.&Inst.Co.*
Rubicon Co.*
Schultheis Corp., E. W.*
Scientific Glass App.Co.*
Scientific Inst. Co.*
Standard Sci. Sup. Corp.
Tagliabue Mfg. Co., C. J.*
Taylor Inst. Cos.*
Teschner-Quinn Corp.
Testrite Inst. Co.*
Wagner & Son, Carl H.*
Walker & Co., Inc., G.T.
Western Scientific Co.
Wilkens-Anderson Co.

SAMPLER
Oil
Refinery Supply Co.*
Sewage
Thwing Inst. Co.*
Silt
Binckley, Geo. Sydney*
White Water
Thwing Inst. Co.*

SCALES
Antimony Test
Seederer-Kohlbusch, Inc.*
Automatic
Amthor Test. Inst. Co., Inc.*
Auto. Weigh. Mach. Co.*
Buffalo Scale Co., Inc.*
Chatillon & Sons, John*
Fairbanks, Morse & Co.*
Kron Co.*
Martin-Decker Corp.*
Merrick Scale Mfg. Co.*
Richardson Scale Co.*
StandardComput.ScaleCo.*
Test. Mach., Inc.*
Toledo Scale Co.*
Triner Sales Co.*
Bag Filling
Auto. Weigh. Mach. Co.*
Exact Weight Scale Co.*
Gaston Scale Co.*
Kron Co.*
Richardson Scale Co.*
Toledo Scale Co.*
Triner Sales Co.*
Basis Weight
AmthorTest.Inst.Co.,Inc.*
StandardComput.ScaleCo.*
Test. Mach., Inc.*
Thwing Inst. Co.*
Toledo Scale Co.*
Triner Sales Co.*
Beam
Exact Weight Scale Co.*
Bulk Weighing
Atlas Car & Mfg. Co.*
Exact Weight Scale Co.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Merrick Scale Mfg. Co.*
Richardson Scale Co.*
StandardComput.ScaleCo.*
Testing Mach., Inc.*
Toledo Scale Co.*
Triner Sales Co.*
Walker & Co., Inc., G.T.
Cement Batching
Gaston Scale Co.*
Checking
Exact Weight Scale Co.*
Classifying
Exact Weight Scale Co.*
Fairbanks, Morse & Co.*
Toledo Scale Co.*
Triner Sales Co.*
Computing
Barnes Prod., Inc.*
Kron Co.*
StandardComput.ScaleCo.*
Testing Mach., Inc.*
Toledo Scale Co.*
Triner Sales Co.*
Walker & Co.,Inc.,Geo.T.
Continuous Weighing
Auto. Weigh. Mach. Co.*
Exact Weight Scale Co.*
Merrick Scale Mfg. Co.*
Richardson Scale Co.*
Toledo Scale Co.*
Triner Sales Co.*
Conveyor
Chatillon & Sons, John*
Merrick Scale Mfg. Co.*
Richardson Scale Co.*
Toledo Scale Co.*
Triner Sales Co.*
Counting
AmthorTest.Inst.Co.,Inc.*
Buffalo Scale Co., Inc.*
Exact Weight Scale Co.*
Fairbanks, Morse & Co.*
Kron Co.*
Seederer-Kohlbusch, Inc.*
StandardComput.ScaleCo.*
Toledo Scale Co.*

SCALES
Counting (Cont'd)
Triner Sales Co.*
Troemner, Henry*
Crane
Buffalo Scale Co., Inc.*
Chatillon & Sons, John*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Kron Co.*
Dairy
Torsion Balance Co.*
Differential
Thwing Inst. Co.*
Drawing
Bruning Co., Inc., Chas.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Kern Co.
Kolesch & Co.
Post Co., Frederick*
Soltmann, Inc., E. G.*
Warren-Knight Co.
White Co., Inc., David
Dump
Atlas Car & Mfg. Co.*
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Dynamometer
Gaston Scale Co.*
Kron Co.*
Martin-Decker Corp.*
Seederer-Kohlbusch,Inc.*
Sherman, L. A.*
Test. Mach., Inc.*
Toledo Scale Co.*
Estimating
Seederer-Kohlbusch,Inc.*
Grain & Seed Testing
Torsion Balance Co.*
Hopper
Atlas Car & Mfg. Co.*
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Knowles Scale Works*
Kron Co.*
Richardson Scale Co.*
Toledo Scale Co.*
Laboratory
American Inst. Co.*
Braun Corp.
Central Scientific Co.*
Chicago Apparatus Co.*
Denver Fire Clay Co.
Dietert Co., Harry W.
Exact Weight Scale Co.*
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Griebel Inst. Co., Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Jacobs Bros. Co., Inc.*
Kauffmann-Lattimer Co.
Lab. Materials Co.
Leitz, Inc., E.
Macalaster-Bicknell Co.
Mine & Smelter Sup. Co.
Newark Scale Wks., Inc.*
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.*
Scien. Glass App. Co.
Scott Co., Henry L.*
Seederer-Kohlbusch,Inc.*
Stan. Sci. Supply Corp.
Test. Mach., Inc.*
Toledo Scale Co.*
Torsion Balance Co.*
Triner Sales Co.*
Troemner, Henry*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.
Williams App. Co.
Larry Car
Atlas Car & Mfg. Co.*
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Kron Co.*
Richardson Scale Co.*
Toledo Scale Co*.
Loss of Weight Recording
WallaceTiernanCo.,Inc.*
Measuring
Amthor Test. Inst. Co., Inc.*
Braun Corp.
Heil Chem. Co., Henry
Kern Co.
Merrick Scale Mfg. Co.*
Richardson Scale Co.*
Test. Mach., Inc.*
Union Tool Co.*
Warren-Knight Co.
Mud
Martin-Decker Co.*
Over & Under
Exact Weight Scale Co.*
Packaging
Exact Weight Scale Co.*
Amthor Test. Inst. Co., Inc.*
Buffalo Scale Co., Inc.*
Dietzgen Co., Eugene
Fairbanks, Morse & Co.*
Heil Chem. Co., Henry
Kron Co.*
Soltmann, Inc., E. G.*
Test. Mach., Inc.*
Toledo Scale Co.*
Torsion Balance Co.*
Warren-Knight Co.
Wilkens-Anderson Co.
Williams Apparatus Co.
Platform
Binghamton Scale Mfg. Co., Inc.*
Braun Corp.
Buffalo Scale Co., Inc.*
Exact Weight Scale Co.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*

SCALES
Platform (Cont'd)
Greiner Co., Emil
Heil Chem. Co., Henry
Knowles Scale Works*
Kron Co.*
Stan. Comput. Scale Co.*
Toledo Scale Co.*
Triner Sales Co.*
Wallace & Tiernan Products, Inc.
Western Scientific Co.
Wilkens-Anderson Co.
Portable
Binghamton Scale Mfg. Co., Inc.*
Buffalo Scale Co., Inc.*
Exact Weight Scale Co.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Heil Chem. Co., Henry
Knowles Scale Works*
Kron Co.*
Richardson Scale Co.*
Stan. Comput. Scale Co.*
Testing Machines, Inc.*
Toledo Scale Co.*
Triner Sales Co.*
Walker&Co.,Inc.,G.T.
Predetermined Weight
Exact Weight Scale Co.*
Gaston Scale Co.*
Rolling Mill
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Kron Co.*
Toledo Scale Co.*
Sacking
Auto. Weigh. Mach. Co.*
Exact Weight Scale Co.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Kron Co.*
Richardson Scale Co.*
Toledo Scale Co.*
Selecting
Exact Weight Scale Co.*
Solder Test
Seederer-Kohlbusch, Inc.*
Steel
Bruning Co., Inc., Chas.
Fairbanks, Morse & Co.*
Kron Co.*
Lufkin Rule Co.*
Warren-Knight Co.
Textile
Torsion Balance Co.*
Track
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Kron Co.*
Toledo Scale Co.*
Travelling
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Truck
Binghamton Scale Mfg. Co., Inc.*
Buffalo Scale Co., Inc.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Toledo Scale Co.*
Water Meter
Gaston Scale Co.*
Yardage
Amthor Test. Inst. Co., Inc.*
Fairbanks, Morse & Co.*
Gaston Scale Co.*
Knowles Scale Works*
Kron Co.*
Seederer-Kohlbusch, Inc.*
Testing Machines, Inc.*
Toledo Scale Co.*
Torsion Balance Co.*
Dead Weight Mercury
Reynolds Gas Reg. Co.*

SEISMOGRAPHS
American Askania Corp.*
American Inst. CCo.*
CambridgeInst.Co.,Inc.*
Cummings Machine Wks.*
Ferner Co., R. Y.
Ferranti Elec., Inc.*
Gaertner Scien. Corp.*
Pfaltz & Bauer, Inc.

SELENEOMETER
Eastern Sci. Supply Co.*

SEXTANT HOLDER
Eastern Sci. Supply Co.*

SEXTANTS
Bliss & Co., Inc., John
Central Scientific Co.*
Fish-Schurman Corp.*
Hand & Sons Co., J. E.
Pacific Scientific Co.
Pioneer Inst. Co., Inc.*
Warren-Knight Co.
Welch Mfg. Co., W. M.*
White Co., Inc., David*
Bubble
Bausch&LombOpt.Co.*

SHIP LOG
Pitometer Log Corp.*

SHUNT METERS
Bristol Co.*
Builders Iron Foundry*
Etna Electric Works*
Martin-Decker Corp.*
Rawson Elec. Inst. Co.*
Reliance Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.
Triplett Elec. Inst. Co.*

SHUNTS
Bristol Co.*
Byram, H. F.
Esterline-Angus Co.*
Etna Electric Works*
Gamewell Co.*
General Elec. Co.*
Gray Inst. Co.*
Hickok Elec. Inst. Co.*
Leeds & Northrup Co.*
Ohmite Mfg. Co.*
Reliance Inst. Co.*
Roller-Smith Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Shallcross Mfg. Co.*
Stan. Elec. Time Co.
Triplett Elec. Inst. Co.*
Welch Mfg. Co., W. M.*
Western Elec. Co., Inc.*
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*

SIEVES, TESTING
Aloe Co., A. S.
Boekel&Co.,Inc.,Wm.*
Braun Corp.*
Central Scientific Co.
Chicago App. Co.
Curtin&Co.,Inc.,W.H.
Daigger &Co., A.
Denver Fire Clay Co.
EmpireLab.Sup.Co.,Inc
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Greiner Co., Emil
Griebel Inst. Co., Inc.
Howe & French, Inc.
Humboldt Mfg. Co.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Precision Scientific Co.*
Refinery Supply Co.
Riehle Test. Mach. Div.
Schaar & Co.
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.

SIGNAL GENERATORS
Ferris Inst. Corp.*
General Radio Co.*

SIGNALING DEVICES
Automatic
Bullard Co., E. D.*
Edison, Inc., Thos. A.*
Eagle Signal Corp.*
Ferranti Elec., Inc.*
Friez&Sons,Inc.,J.P.*
General Elec. Co.*
H-B Inst. Co., Inc.*
Holtzer-Cabot Elec. Co.*
Jensen Inst. Co.
Kellogg Switch. & Sup. Co.*
Koch & Co., Paul W.*
Leeds & Northrup Co.*
Leland Elec. Co.*
Lewis Eng. Co.*
Miles Reprod. Co., Inc.*
Paragon Elec. Co.*
Rhamstine, J. Thos.*
Stan. Elec. Time Co.*
Teletouch Corp.*
Thermo Con. Dev., Inc.
Wallace & Tiernan Products, Inc.*
Walser Auto. Timer Co.*

SINE BARS
Van Keuren Co.*

SLIDE RULES
See Rules, Slide

SLIDING GAGES
EmpireLab.Sup.Co.,Inc.
Western Scientific Co.

SLOW MOTION STUDY EQUIPMENT
Com. Eng. Labs.*

SLUMP CONES
Humboldt Mfg. Co.*

SMOKE ALARMS
Bailey Meter Co.*
Defender Auto. Reg. Co.*
Electronic Products Co.*
Ess Instrument Co.*
General Elec. Co.*
Gen. Electronics Corp.*
General Inst. & Con. Co.
Jensen Inst. Co.
McNeill Eng. Equip. Co., T. W.*
Weston Elec. Inst. Corp.*

SOLAR PROJECTING SCREEN
Eastern Sci. Supply Co.*

SOUND INDICATORS & ANALYZERS
Com. Eng. Labs.*

SOUNDING LEAD
Moeller Inst. Co., Inc.*

SOUNDING MACHINES
Bliss & Co., Inc., John
Hand & Sons Co., J. E.*
Negus, T. S. & J.D.*

SOUNDING TUBES
Moeller Inst. Co., Inc.*

SPECTRA DEMONSTRATOR
Eastern Sci. Supply Co.*

SPECTRAL TUBES CONTAINING RARE GASES
General Phys. Lab.*

SPECTROBOLOMETERS
Western Scientific Co.

SPECTOGRAPHS
Akatos, Inc.
Aloe Co., A. S.
American Askania Corp.
Bausch&LombOpt.Co.*
Braun Corp.
Bryden Co.*
Biddle Co., James G.
Central Scientific Co.*
Daigger & Co., A.
Fisher Scientific Co.
Fuess, Inc., R.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J.
Howe & French, Inc.
Kauffman-Lattimer Co.
Palo-Myers, Inc.
Schaar & Co.
Walker&Co.,Inc.,G.T.
Welch Mfg., Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

Vacuum
Mann Inst. Co.*

SPECTROMETERS
Akatos, Inc.
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Biddle Co., James G.
Central Scientific Co.*
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Fuess, Inc., R.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J
Hellige, Inc.*
Kauffman-Lattimer Co.
Marietta Apparatus Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.
Schaar & Co.
Spencer Lens Co.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.

SPECTRO-PHOTOMETERS
Akatos, Inc.
Aloe Co., A. S.
Bausch&LombOpt.Co.*
Biddle Co., James G.
Central Scientific Co.*
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Fuess, Inc., R.
Gaertner Scientific Corp.*
General Elec. Co.*
Greene Brothers, Inc.
Kauffman-Lattimer Co.
Marietta Apparatus Co.
Palo-Myers, Inc.
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

SPECTROSCOPES
Aloe Co., A. S.
American Askania Corp.
Bausch&LombOpt.Co.*
Biddle Co., James G.
Braun Corp.
Central Scientific Co.*
Daigger & Co., A.
Denver Fire Clay Co.
EmpireLab.Sup.Co.,Inc.
Ferner Co., R. Y.
Fisher Scientific Co.
Fuess, Inc., R.*
Gaertner Scientific Corp.*
Greene Brothers, Inc.
Hellige, Inc.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Leitz, Inc., E.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Sargent & Co., E. H.
Schaar & Co.
Spencer Lens Co.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

SPECTRUM TUBES
Gaertner Scientific Corp.*

SPEEDOMETERS
Cramer&Co.,Inc.,R.W.
Kollsman Inst. Co., Inc.*
Stan. Elec. Time Co.
Stewart Warner Corp.*
Testing Machines, Inc.*
U. S. Recording Co.*
Waltham Watch Co.*

SPEED INDICATORS
See Tachometers

SPEED RECORDERS
See Recorders, Speed

SPEED REGULATORS
See Regulators, Speed

SPHEROMETER
Fish-Schurman Corp.*
Gaertner Scientific Corp.*
Mann Inst. Co.*
Palo-Myers, Inc.
Welch Mfg. Co., W. M.*
Western Scientific Co.

SPHYGMOMANO-METERS
Baum Co., Inc., W. A.*
Becton, Dickinson & Co.*
Central Scientific Co.
Daigger & Co., A.
Eimer & Amend

SPHYGMOMANO-METERS (Cont'd)
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Hellige, Inc.*
Kauffman-Lattimer Co.
Marietta Apparatus Co.
Pre. Ther. & Inst. Co.*
Taylor Inst. Cos.*
Waltham Watch Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.

SQUARES, COMBINATION
Lufkin Rule Co.*

STADIMETERS
Gurley, W. & L. E.*

Navigation
Bliss & Co., Inc., John
Kollmorgen Opt. Corp.*
Warren-Knight Co.

Ordnance
Kollmorgen Opt. Corp.*
Warren-Knight Co.

STANDARD CELL
Braun Corp.
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Chicago Apparatus Co.
Eimer & Amend
EmpireLab.Sup.Co.,Inc.*
Eppley Lab., Inc.*
Fisher Scientific Co.
Gordon Co., Claud S.
Gray Instrument Co.*
Greene Brothers, Inc.
Kauffman-Lattimer Co.
Leeds & Northrup Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Welch Mfg. Co., W. M.
Western Scientific Co.
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

STANDARDS
Resistance
Leeds & Northrup Co.*

Potential
Leeds & Northrup Co.*

Inductance
Leeds & Northrup Co.*

Capacitance
Leeds & Northrup Co.*

STATION CONTROL EQUIPMENT
CambridgeInst.Co.,Inc.*
Edison, Inc., Thos. A.*
General Elec. Co.*
Hagan Corp.*
Kellogg Switch. & Sup. Co.*
Leeds & Northrup Co.*
Wallace & Tiernan Products, Inc.*

STATISCOPES
Minerallac Elec. Co.*

STATOSCOPE
American Askania Corp.

STEEL TAPES
See Tapes, Steel

STELLAR SPECTROSCOPE
Eastern Scie. Supply Co.*

STETHOSCOPES, ENGINEERS
Becton,Dickinson&Co.*
CambridgeInst.Co.,Inc.*
Gilmore, E. R.*
Gilmore Drug Co., W. J.
Western Scientific Co.

STIFFNESS TESTER, PAPER
See Tester, Stiffness

STILLS, AUTOMATIC WATER
Barnstead Still & Ster. Co.*
Stokes Mach. Co., F. J.*

STOP WATCHES
See Watches, Stop

STRAIN GAGES
See Gages, Strain

STRAIN TESTER, GLASS
See Tester, Strain

STREAM GAGING INSTRUMENTS
Gurley, W. & L. E.*
Morey & Jones, Ltd.*
Pacific Scientific Co.

STRESS INDICATOR
Baldwin-Southwark Corp.*
CambridgeInst.Co.,Inc.*
Martin-Decker Corp.*
Testing Machines, Inc.*

STROBOSCOPES
Com. Eng. Labs.*
Ducasse & Son, F.*
Electrocon Corp.*
Gen. Electronics Corp.*
General Phys. Lab.*
General Radio Co.*
Inter. Broad. Equip. Co.*
Laboratory Materials Co.
Livingston & Southard, Inc.
Macalaster Bicknell Co.*
Marietta Apparatus Co.
Scherr Co., George*
Stroboscope Corp.
Suter, Alfred*
Testing Machines, Inc.
Welch Mfg. Co., W. M.*
Western Scientific Co.
WestinghouseE.&M.Co.*
Zeiss, Inc., Carl

SULPHUR BOMBS
Parr Inst. Co.*

SUNSHINE RECORDERS
See Recorders, Sunshine

SURFACE GAGE
See Gage, Surface

SURFACE PLATES, GLASS
Bausch&LombOpt.Co.*
Bryden Co.
Eitzen Co., Louis C.
Fish-Schurman Corp.*
Glass Engraving Co.*
Kollmorgen Opt. Corp.*
Mann Instrument Co.*
Van Keuren Co.*

SURGE-CREST AMMETER
See Ammeter, Surge Crest

SURGE RECORDERS
See Recorders, Surge

SURVEYING INSTRUMENTS
Underground, for wells or bore holes
Sperry-SunWellSur.Co.*

SURVEYOR'S CHAIN
See Chain, Surveyor's

SWITCHES
Automatic Transfer
Automatic Switch Co.*

Instrument
Roller-Smith Co.*

Magnetic
Signal Eng. & Mfg. Co.*

Meter Test
Elec. Facilities, Inc.*
Meter Devices Co.*

Mercury
Boston Auto Gage Co.*
General Elec. Vap. Lamp Co.*
Jefferson Elec. Co.*
Machlett & Son, E.*
Mercoid Corp.*

Pyrometer
Gordon Co., Claud S.*
Thwing Inst. Co.*

Relay
Meter Devices Co.*

Rotary
Lewis Eng. Co.*

Snap
BurgessLabs.,Inc.,C.F.*

SYNCHRONOSCOPES
General Elec. Co.*
Roller-Smith Co.*
Weston Elec. Inst. Corp.*

SYNCHRONIZATION FORKS
Electrical
Riverbank Labs.*
CambridgeInst.Co.,Inc.*
Leeds & Northrup Co.*

SYNCHRONOUS MOTORS
Bodine Electric Co.*
Electric Spec. Co.*
Henschel&Co.,Inc.,C.J.*
Holtzer-Cabot Elec. Co.*
Stan. Elec. Time Co.
Stromberg Elec. Co.
Wallace & Tiernan Products, Inc.*
Waltham Watch Co.*
Warren Telechron Co.*
WestinghouseE.&M.C.*

TACHOGRAPHS
Amthor Test. Inst. Co., Inc.*
Biddle Co., James G.
CoatsMach.ToolCo.,Inc.
Ohmer Fare Reg. Co.*
Sticht & Co., H. H.*
Zernickow Co., O.

TACHOMETERS
Chicago Apparatus Co.
CoatsMach.ToolCo.,Inc.
Com. Eng. Labs.
Cummings Mach. Wks.*
Curtin&Co.,Inc.,W.H.
Dietzgen Co., Eugene
Eimer & Amend
Electrocon Corp.*
EmpireLab.Sup.Co.,Inc.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Gray Instrument Co.*
Henschel&Co.,Inc.,C.J.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
McDonnell Odometer Co.*
Millers Falls Co.*
Mine & Smelter Sup. Co.
N.Y. Lab. Sup. Co., Inc.
Ohmer Fare Reg. Co.*
Sargent & Co., E. H.
Scientific Glass App. Co.
Starrett Co., L. S.*
Teltru Inst. Co.
Thermo Con. Dev., Inc.
U. S. Fare Record. Co.*
Welch Mfg. Co., W. M.
Wilkens-Anderson Co.

Centrifugal
AeromarineInst.Co.,Inc.*
Bailey Meter Co.*
Barbour-Stockwell Co.*
Elec. Inst. & Eng. Co., Inc.*
Elec. Tachometer Corp.*
General Inst. & Con. Co.
Gordon Co., Claud S.

TACHOMETERS
Centrifugal (Cont'd)
Greiner Co., Emil
Motrola Sales Co., Jones*
Kendall, W. Floyd*
Kollsman Inst. Co., Inc.*
Pacific Scientific Co.
Pre. Ther. & Inst. Co.*
Rieker Inst. Co.*
Scherr Co., George*
Stewart Warner Corp.*
Sticht & Co., H. H.*
Veeder Root, Inc.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Zernickow Co., O.

Chronometric
Cramer&Co.,Inc.,R.W.
Jaeger Watch Co., Inc.*
Stover-Lang Co.*

Electric
Brown Instrument Co.*
Denver Fire Clay Co.
Ducasse & Son, F.*
Elec. Tachometer Corp.*
Esterline-Angus Co.*
General Electric Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Minn-HoneywellReg.Co.*
Pacific Scientific Co.
Pitometer Log Corp.*
Roller-Smith Co.*
Stan. Elec. Time Co.*
Stover-Lang Co.*
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*

Electro-Magnetic
Bristol Co.*
Elec. Tachometer Corp.*
Esterline-Angus Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Kollsman Inst. Co., Inc.*
Pacific Scientific Co.
Stewart Warner Corp.*
Veeder Root, Inc.*
Waltham Watch Co.*
Weston Elec. Inst. Corp.*

Pneumatic
Bailey Meter Co.*
General Radio Co.*

Portable
Amthor Test. Inst. Co., Inc.
Barbour-Stockwell Co.*
Biddle Co., James G.
Con. Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
Dwyer Mfg. Co., F. W.
Elec. Inst. & Eng. Co., Inc.*
Elec. Tachometer Corp.*
Foxboro Co.
Gordon Co., Claud S.
Hasler-Tel Co.*
Motrola Sales Co., Jones*
Roller-Smith Co.*
Scherr Co., George*
Sticht & Co., H. H.*
Testing Machines, Inc.*
Veeder Root, Inc.*
Warren-Knight Co.
Western Scientific Co.
Zernickow Co., O.*

Rotary Table
Martin-Decker Co.*

Vibrating Reed
Biddle Co., James G.
Elec.Inst.&Eng.Co.,Inc.*

TACHOMETER TESTERS
Rubicon Co.*

TACHOSCOPES
Amthor Test. Inst. Co., Inc.
Biddle Co., James G.
Con. Ashcroft Hancock Co., Inc.*
Scherr Co., George*
Sticht & Co., H. H.*
Zernickow Co., O.

TANGENT METER
Bausch&LombOpt.Co.*

TAFFRAIL LOGS, SHIPS
Bliss & Co., Inc., John*

TAPES
Steel
Bruning Co., Inc., Chas.
Central Scientific Co.
Curtin&Co.,Inc.,W.H.
Dietzgen Co., Eugene*
Elliott Co., B. K.
EmpireLab.Sup.Co.,Inc.
Ferner Co., R. Y.
Fisher Scientific Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Heil Chem. Co., Henry
Kauffman-Lattimer Co.
Kolesch & Co.
Lufkin Rule Co.*
Mine & Smelter Sup. Co.
Post Co., Frederick
Refinery Supply Co.
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Teltru Instrument Co.
Union Tool Co.
Walker&Co.,Inc.,G.T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
White Co., Inc., David
Wilkens-Anderson Co.

Surveyor's
Bruning Co., Inc., Chas.
Dietzgen Co., Eugene*
Elliott Co., B. K.
Ferner Co., R. Y.
Kauffman-Lattimer Co.

TAPES
Surveyor's
Kolesch
Lufkin
Post
Soltmann
Starrett
Ulmer
Union
Warren-
White

TELEMETERS
American
Bailey Meter Co.*
Baldwin-Southwark Corp.*
Biddle Co., James G.
Bristol Co.*
Brown Instrument Co.*
Builders Iron Foundry*
Bunnell & Co., J. H.
Con. Ashcroft Hancock Co., Inc.*
Cutler-Hammer, Inc.*
Esterline-Angus Co.*
Friez&Sons,Inc.,J.P.*
General Electric Co.*
Gen. Inst. & Con. Co.
Kern Co.
L. A. B. Corp.*
Landis & Gyr, Inc.
Leeds & Northrup Co.*
Minn-HoneywellReg.Co.*
Morey & Jones, Ltd.*
Pacific Scientific Co.
Pitts. Equit. Meter Co.
Republic Flow Meters Co.
Stan. Thermometer Inc.*
Wallace & Tiernan Products, Inc.*
Warren-Knight Co.
Water Works
WestinghouseE.&M.Co.*

TELESCOPES
American Optical Co.
Bausch&LombOpt.Co.*
Bliss & Co., Inc., John
Bryden Co.*
Buff & Buff Mfg. Co.*
Central Scientific Co.
Chicago Apparatus Co.
Elliott Co., B. K.
Ferner Co., R. Y.
Fish-Schurman Corp.*
Gaertner Scientific Corp.*
Gurley, W. & L. E.*
Hand & Sons Co., J. E.
Kern Co.
Kollmorgen Opt. Corp.*
Laboratory Materials Co.
Mogey & Sons, Inc., Wm.
Palo-Myers, Inc.
Walker&Co.,Inc.,G.T.
Warner & Swasey Co.*
Warren-Knight Co.*
Welch Mfg. Co., W. M.
Western Scientific Co.
Wilkens-Anderson Co.
Wollensak Optical Co.*
Zeiss, Inc., Carl

Alignment
Scherr Co., George*

Azimuth
Warner & Swasey Co.*

Bore Inspection
Scherr Co., George*

Reflecting
Warner & Swasey Co.*

Refracting
Warner & Swasey Co.*

Zenith
Warner & Swasey Co.*

TENSION INDICATOR
Martin-Decker Corp.*

TENSIOMETERS
Baldwin-Southwark Corp.
Braun Corp.
CambridgeInst.Co.,Inc.*
Central Scientific Co.
Gilmore Drug Co., W. J.
Greiner Co., Emil
Martin-Decker Corp.*
OlsenTest.Mach.Co.,T.*
Refinery Supply Co.
Western Scientific Co.

TEST BLOCKS
Meter Devices Co.*

TESTERS
Asphalt
American Instrument Co.*
Braun Corp.*
Chatillon & Sons, John
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Exact Weight Scale Co.*
Fisher Scientific Co.*
Fish-Schurman Corp.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc.
Heil Chem. Co., Henry
Howe & French, Inc.
Humboldt Mfg. Co.*
Laboratory Materials Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.*
Precision Scientific Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., F. W.*
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.
Testrite Instrument Co.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

TESTERS

Battery

Bauer [illegible] Co., Inc.
Berg Mfg. Co., James*
Braun Corp.
Byram, H. F.
Central Scientific Co.
Chicago Apparatus Co.,
Curtin&Co.,Inc.,W.H.
Denver Fire Clay Co.
Edison Inc., Thos. A.*
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Ferranti Electric, Inc.*
Fisher Scientific Co.*
Fleischhauer & Son, Fr.*
Gamewell Co.
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Griebel Inst. Co., Inc.*
Heil Chem. Co., Henry
Hickok Elec. Inst. Co.*
Howe & French, Inc.
Hy Ef Elec. Prod. Co.*
Lundquist Tool & Mfg. Co.*
Mine & Smelter Sup. Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Norton Elec. Inst. Co.*
Reliance Inst. Co.*
Roller-Smith Co.*
Sargent & Co., E. H.
Schaar & Co.
Shallcross Mfg. Co.*
Stan. Elec. Time Co.
Stromberg Motos. Corp.*
Testrite Instrument Co.*
Triplett Elect. Inst. Co.*
Wagner & Son, Carl H.*
Walker&Co.,Inc.,G.T.
Welch Mfg. Co., W. M.
WestinghouseE.&M.Co.*
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

Bearing

Baldwin-Southwark Corp.
OlsenTest.Mach.Co.,T.*
Steel City Test. Lab.*
Suter, Alfred*

Beating

Green, Arthur B.
Testing Machines, Inc.*

Bending

Baldwin-Southwark Corp.*
Detroit Test. Mach. Co.*
Riehle Test. Mach. Div.*
Schaar & Co.
Scott Co., Henry L.*
Testing Machines, Inc.*
Thwing Inst. Co.*
OlsenTest.Mach.Co.,T.*
Walker&Co.,Inc.,G.T.

Brittleness

Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Heil Chem. Co., Henry
N.Y. Lab. Sup. Co., Inc.
Schaar & Co.
Testing Machines, Inc.*
Testing Machines, Inc.*
OlsenTest.Mach.Co.,T.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.

Bursting

Perkins&Sons,Inc.,B.F.*
Scott Co., Henry L.*

Cable

Amer. Transformer Co.*
KelloggSwitch.&Sup.Co.
Leeds & Northrup Co.*
Martin-Decker Corp.*
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Western Elec. Co., Inc.*
West. Electro-Mech. Co., Inc.*

Lead Sheathed

Sperry Products, Inc.*

Coal

American Inst. Co.*
Braun Corp.*
Daigger & Co., A.
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
N.Y. Lab. Sup. Co., Inc.
Palo-Myers, Inc.*
Precision Scientific Co.*
Sargent & Co., E. H.
Schaar & Co.
Testrite Instrument Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.

Color

American Instrument Co.*
Atlas Elec. Dev. Co.*
Curtin&Co.,Inc.,W.H.
Eimer & Amend*
EmpireLabSup.Co.,Inc.
Ess Instrument Co.*
Fisher Scientific Co.*
Fish-Schurman Corp.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Palo-Myers, Inc.*
Refinery Supply Co.

TESTERS

Color (Cont'd)

Sargent & Co., E. H.
Schaar & Co.
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.*
Western Scientific Co.
WestinghouseE.&M.Co.*
Wilkens-Anderson Co.

Compression

Scott Co., Henry L.*

Creep

Baldwin-Southwark Corp.*

Damping

Baldwin-Southwark Corp.*

Emulsion & Demulsibility

Eimer & Amend*

Feed Water

LaMotteChem.Prod.Co.*

Folding Endurance

Amthor Test. Inst. Co., Inc.*
OlsenTest.Mach.Co.,T.*
Testing Machines, Inc.*
Thwing Instrument Co.*
Green, Arthur B.*
Star Brass Mfg. Co.*
Testing Machines, Inc.*
Williams Apparatus Co.*

Fuel

American Instrument Co.*
Braun Corp.*
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Eimer & Amend
Fisher Scientific Co.*
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Lewis Eng. Co.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.

Gage

American Instrument Co.*
Amthor Test. Inst. Co., Inc.*
Con. Ashcroft Hancock Co., Inc.*
CrosbySteamG.&V.Co.*
Curtin&Co.,Inc.,W.H.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Parks, Jr., Harry S.*
Pitts. Equit. Meter. Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Star Brass Mfg. Co.*
Steel City Test. Lab.*
Testing Machines, Inc.
OlsenTest.Mach.Co.,T.*
Union Tool Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Gas

American Meter Co.*
Braun Corp.*
Bullard Co., E. D.
ConnellyIronS.&G.Co.*
Curtin&Co.,Inc.,W.H.
Daigger &Co., A.
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Fish-Schurman Corp.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Kauffman-Lattimer Co.
Laboratory Materials Co.
Palo-Myers, Inc.
Podbielniak Ind. Res. & Eng. Labs.*
Precision Scientific Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Sensitive Res. Inst. Co.*
Teschner-Quinn Corp.
Testrite Inst. Co.*
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.*
Western Scientific Co.
Wilkens-Anderson Co.
Williams Apparatus Co.*

Glue

Eimer & Amend*
Fish-Schurman Corp.*
EmpireLab.Sup.Co.,Inc.
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Milwaukee G. Wks. Inc.*
Palo-Myers, Inc.
Sargent & Co., E. H.
Testrite Instrument Co.*
Thwing Instrument Co.*
OlsenTest.Mach.Co.,T.*
Walker&Co.,Inc.,G.T.

Grain

Buffalo Scale Co., Inc.*
Newark Scale Wks., Inc.*

TESTERS (Cont'd)

Grease

American Inst. Co.*
Braun Corp.
Central Scientific Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Eimer & Amend
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Humboldt Mfg. Co.*
Laboratory Materials Co.
Mine & Smelter Sup. Co.
N.Y. Lab. Sup. Co., Inc.
Riehle Test. Mach. Div.*
OlsenTest.Mach.Co.,T.
Palo-Myers, Inc.
Precision Scientific Co.*
Rascher & Betzold
Refinery Supply Co.
Stan. Scien. Sup. Corp.
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.
Thwing Instrument Co.*
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.

Ground Insulation

Biddle Co., James G.

Gummed Tape

Thwing Instrument Co.*

Hardness of Plastic Films

Munsell Color Co., Inc.*

Hydrogen-Ion

Taylor&Co.,Inc.,W.A.*

Initial Tearing

Thwing Instrument Co.*

Insulation

American Trans. Co.*

Knit Goods

Perkins&Son,Inc.,B.F.*

Magnetic

CambridgeInst.Co.,Inc.*
General Electric Co.*
Koch & Co., Paul W.*
Kurman Elec. Co.*
Leeds & Northrup Co.*
Rawson Elec. Inst. Co.*
Rubicon Co.*
Sensitive Res. Inst. Co.*
Walker&Co.,Inc.,G.T.

Malt

Eimer & Amend*

Moisture
See Moisture Meters

Oil

American Inst. Co.*
American Trans. Co.*
Boekel&Co.,Inc.,Wm.*
Braun Corp.*
Clardon Corp.*
Curtin&Co.,Inc.,W.H.
Doerr Glass Co., Inc.*
Eimer & Amend*
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Friez&Sons,Inc.,J.P.*
General Inst. & Con. Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Heil Chem. Co., Henry
Howe & French, Inc.
Humboldt Mfg. Co.*
Kauffman-Lattimer Co.
Laboratory Materials Co.
Palo-Myers, Inc.*
Paragon Electric Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Precision Scientific Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Schultheis Corp., E. W.*
Sensitive Res. Inst. Co.*
Sperry Products, Inc.*
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.
Testrite Instrument Co.*
OlsenTest.Mach.Co.,T.*
Walker&Co.,Inc.,G.T.
WestinghouseE.&M.Co.*
Wilkens-Anderson Co.

Oxygen

Braun Corp.*
CambridgeInst.Co.,Inc.*
Eimer & Amend*
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Mine Safety App. Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
Sensitive Res. Inst. Co.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Paper Formation

Thwing Instrument Co.*

Parafin

American Inst. Co.*
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*

TESTERS

Parafin (Cont'd)

Howe & French, Inc.
Laboratory Materials Co.
Perkins&Son,Inc.,B.F.*
Podbielniak Ind. Res. & Eng. Labs.*
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
TagliabueMfg.Co.,C.J.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Penetration (Paper)

Williams Apparatus Co.*

Petroleum

American Inst. Co.*
Braun Corp.*
Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Doerr Glass Co., Inc.*
Elmer & Amend*
EmpireLabSup.Co.,Inc.
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Heil Chem. Co., Henry
Howe & French, Inc.
Humboldt Mfg. Co.*
Laboratory Materials Co.
N. J. Lab. Supply Co.
Palo-Myers, Inc.
Podbielniak Ind. Res. & Eng. Labs.*
Precision Scientific Co.*
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Pitch

Chicago Apparatus Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Howe & French, Inc.
Humboldt Mfg. Co.*
Laboratory Materials Co.
OlsenTest.Mach.Co.,T.*
Schultheis Corp., E. W.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Plasticity

Scott Co., Henry L.*

Porosity

Gurley, W. & L. E.*

Pulp

Williams Apparatus Co.*

Sand

American Inst. Co.*
Braun Corp.*
Daigger & Co., A.
Dietert Co., Harry W.*
EmpireLab.Sup.Co.,Inc.
Fisher Scientific Co.*
Gilmore Drug Co., W. J.
Howe & French, Inc.
Humboldt Mfg. Co.*
Kolesch & Co.
Laboratory Materials Co.
Newark Scale Wks., Inc.*
OlsenTest.Mach.Co.,T.*
Refinery Supply Co.
Sargent & Co., E. H.
Walker&Co.,Inc.,G.T.
Wilkens-Anderson Co.

Shearing

Scott Co., Henry L.*

Slowness

Green, Arthur B.*

Softness

Thwing Instrument Co.*

Springs

Chatillon & Sons, John*
Morehouse Mach. Co.*
Toledo Scale Co.*

Stiffness (Paper)

Wilson Mech. Inst. Co., Inc.*

Stiffness & Bending

Detroit Test. Mach. Co.*
EmpireLab.Sup.Co.,Inc.
Gilmore Drug Co., W. J.
Gurley, W. & L. E.*
OlsenTest.Mach.Co.,T.*
Riehle Test. Mach. Div.*
Testing Machines, Inc.*
Thwing Instrument Co.*
Walker&Co.,Inc.,G.T.

Strain (Glass)

Akatos, Inc.
American Opt. Co.*
Bausch&LombOpt.Co.*
Braun Corp.
Fisher Scientific Co.*
Gaertner Scientific Corp.*
Gilmore Drug Co., W. J.
Palo-Myers, Inc.
Schaar & Co.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Stretch

Amthor Test. Inst. Co., Inc.*
EmpireLab.Sup.Co.,Inc.
Fish-Schurman Corp.*

TESTERS

Stretch (Cont'd)

Gilmore Drug Co., W. J.
OlsenTest.Mach.Co.,T.*
Perkins&Son,Inc.,B.F.*
Schaar & Co.
Steel City Test. Lab.*
Suter, Alfred*
Testing Machines, Inc.*
Testing Machines, Inc.*
Thwing Instrument Co.*
Walker&Co.,Inc.,G.T.

Tearing

EmpireLab.Sup.Co.,Inc.
Gilmore Drug Co., W. J.

Tearing-Paper

Gurley, W. & L. E.*
Schaar & Co.
Steel City Test. Lab.*
Suter, Alfred*
Testing Machines, Inc.*
Thwing Instrument Co.*
Walker&Co.,Inc.,G.T.

Tenderness

Humboldt Mfg. Co.*

Tensile (very light load)

Amthor Test. Inst. Co., Inc.*
CambridgeInst.Co.,Inc.*
Detroit Test. Mach. Co.*
Dietert Co., Harry W.*
Eitzen Co., Louis C.
EmpireLab.Sup.Co.,Inc.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
OlsenTest.Mach.Co.,T.*
Perkins&Son,Inc.,B.F.*
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Schaar & Co.
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Testing Machines, Inc.*
Testing Machines, Inc.*
Thwing Instrument Co.*
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Wilkens-Anderson Co.

Thermometer

Parks, Jr., Harry S.*

Torsion

Baldwin-Southwark Corp.*

Torsional Creep

Baldwin-Southwark Corp.*

Turn Indicator

Parks, Jr., Harry S.*

Universal

AmthorTest.Inst.Co.,Inc.*
Baldwin-SouthwarkCorp.*
Detroit Test. Mach. Co.*
Dietert Co., Harry W.*
EmpireLab.Sup.Co.,Inc.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Lab. Mat. Co.
OlsenTest.Mach.Co.,T.*
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Schaar & Co.
Suter Alfred*
Test. Mach., Inc.*
Walker & Co.,Inc.,Geo.T.

Vapor Transmission

Thwing Inst. Co.*

Varnish

Daigger & Co., A.
Eimer & Amend
Empire Lab. Sup.Co.,Inc.
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., OttoR.*
Howe & French, Inc.
Lab. Mat. Co.
N. J. Lab. Supply Co.
Perkins &Son,Inc.,B.F.*
Sargent & Co., E. H.
Teschner-Quinn Corp.
Walker & Co.,Inc.,Geo.T.
Wilkens-Anderson Co.

Voltage

Schweitzer &Conrad,Inc.*
Daigger & Co., A.
Doerr Glass Co., Inc.*
Eimer & Amend
Elgin Softener Corp.*
Empire Lab. Sup.Co.,Inc.
Fish-Schurman Corp.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc.,OttoR.*
Howe & French, Inc.
Lab. Mat. Co.
Leeds & Northrup Co.*
Palo-Myers, Inc.*
Refinery Supply Co.
Sargent & Co., E. H.
Teschner-Quinn Corp.
Walker & Co.,Inc.,Geo.T.
Wallace & Tiernan Prod. Inc.*
Wilkens-Anderson Co.

Water Meter

Clark Co., H. W.*
Ford Meter Box Co.*

Water Penetration

Thwing Inst. Co.*

Watthour Meter

States Co.

Wire

Scott Co., Henry L.*

Yarn

Scott Co., Henry L.*

TESTING DEVICES

Current transformer testing equipment.

Elec. Facilities, Inc.*

TESTING DEVICES (Cont'd)

Meter Testing Equipment

Elec. Facilities, Inc.*

Potential Transformer Testing Equipment

Elec. Facilities, Inc.*

TESTING MACHINES

Abrasion

Braun Corp.
Denver Fire Clay Co.
Gilmore Drug Co., W. J.
Howe & French, Inc.
Morehouse Mach. Co.*
Olsen Test. Mach. Co., Tinius*
Riehle Test. Mach. Div.*
Scott Co., Henry L.*
Suter, Alfred*
Test. Mach., Inc.*

Abrasion for Rubber

Morehouse Mach. Co.*

Alternating Stress

Baldwin-SouthwarkCorp.*
Olsen Test. Mach. Co., Tinius*
Riehle Test. Mach. Div.*
Steel City Test. Lab.*
Suter, Alfred*

Canvas & Duck

Olsen Test. Mach. Co., Tinius*
Riehle Test. Mach. Div.*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*

Cement

American Inst. Co.*
Baldwin-SouthwarkCorp.*
Braun Corp.
Chicago App. Co.
Curtin & Co., Inc., W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Fisher Sci. Co.*
Gilmore Drug Co., W. J.
Howe & French, Inc.
Lab. Mat. Co.
Olsen Test. Mach. Co., Tinius*
Palo-Myers, Inc.
Refinery Supply Co.
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker & Co.,Inc.,Geo.T.
Western Sci. Co.

Coil Spring

Coats Mach. ToolCo.,Inc.

Concrete

American Inst. Co.*
Baldwin-SouthwarkCorp.*
Braun Corp.
Curtin & Co., Inc.,W.H.
Denver Fire Clay Co.
Fisher Sci. Co.*
Gaston Scale Co.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Howe & French, Inc.
Olsen Test. Mach. Co., Tinius*
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Steel City Test. Lab.*
Suter, Alfred*
Walker & Co.,Inc.,Geo.T.
Western Sci. Co.

Ductility

American Inst. Co.*
Baldwin-SouthwarkCorp.*
Bock Mach. Co.*
Braun Corp.
Curtin & Co., Inc.,W.H.
Detroit Test. Mach. Co.*
Eimer & Amend
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Howe & French, Inc.
Humboldt Mfg. Co.*
Lab. Mat. Co.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Olsen Test. Mach. Co., Tinius*
Palo-Myers, Inc.
Precision Sci. Co.*
Refinery Supply Co.
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker & Co.,Inc.,Geo.T.
Western Sci. Co.

Endurance see Fatigue

Fatigue

AmthorTest.Inst.Co.,Inc.*
Baldwin-SouthwarkCorp.*
Braun Corp.
Cambridge Inst.Co.,Inc.*
Gordon Co., Claud S.
Olsen Test. Mach. Co., Tinius*
Pitts. Inst. & Mach.Co.*
Scott Co., Henry L.*
Suter, Alfred*
Test. Mach., Inc.*
Thompson Grinder Co.*
Thwing Inst. Co.*
Walker & Co.,Inc.,Geo.T.
Western Sci. Co.

Gear

Scherr Co., George*

Hardness

Braun Corp.
Central Sci. Co.
Chicago App. Co.
Denver Fire Clay Co.
Detroit Test. Mach. Co.*

TESTING MACHINES

Hardness (Cont'd)

Dietert Co., Harry W.*
Eimer & Amend
Empire Lab. Sup.Co.,Inc
Ferner Co., R. Y.
Fisher Sci. Co.*
Gilmore Drug Co., W. J.
Gogan Machine Corp.*
Gordon Co., Claud S.
Heil Chemical Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Lab. Mat. Co.
Mine & Smelter Sup. Co.
Morehouse Mach. Co.*
Olsen Test. Mach. Co.,
Tinius*
Pacific Sci. Co.
Palo-Myers, Inc.
Pfaltz & Bauer, Inc.
Pitts. Inst. & Mach.Co.*
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Schaar & Co.
Spencer Lens Co.*
Standard Sci. Sup. Corp.
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker & Co.,Inc.,Geo.T.
Western Sci. Co.
Wilson Mech. Inst. Co.,
Inc.*

Impact

Baldwin-SouthwarkCorp.*
Braun Corp.
Bultman Co., F. H.*
Cambridge Inst. Co.,Inc.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Gray Inst. Co.*
Impact Reg. Co.*
Lab. Mat. Co.,
Mine & Smelter Sup. Co.
Olsen Test. Mach. Co.,
Tinius*
Pitts. Inst. & Mach.Co.*
Riehle Test. Mach. Div.*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Thwing Inst. Co.*
Walker & Co.,Inc.,Geo.T.
Western Sci. Co.
Zuhr, Inc., Henry*

Leather

AmthorTest.Inst.Co.,Inc.*
Detroit Test. Mach. Co.*
Olsen Test. Mach. Co.,
Tinius*
Riehle Test. Mach. Div.*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker & Co., Inc.,G.T.

Metal
See Physical

Paint

Atlas Elec. Dev. Co.*
Braun Corp.
Eimer & Amend
Fisher Sci. Co.*
General Elec. Vapor
Lamp Co.*
Gilmore Drug Co., W. J.
Munsell Color Co., Inc.*
Olsen Test. Mach Co.,
Tinius*
Palo-Myers, Inc.
Sargent & Co., E. H.
Scott Co., Henry L.*
Teschner-Quinn Corp.
Test. Mach., Inc.*
Walker&Co.,Inc.,Geo.T.
WestinghouseE.&M.Co.*
Wilkens-Anderson Co.

Paper

American Inst. Co.*
Amthor Test. Inst. Co.,
Inc.*
Atlas Elec. Dev. Co.*
Braun Corp.
Central Sci. Co.*
Eimer & Amend
Fuess, Inc., R.*
Gilmore Drug Co., W. J
Greiner Co., Emil*
Gurley, W. & L. E.*
N. J. Lab. Supply Co.
Olsen Test. Mach. Co.,
Tinius*
Pacific Sci. Co.
Palo-Myers, Inc.
Perkins&Son,Inc.,B.F.*
Riehle Test. Mach. Div.*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker&Co.,Inc.,Geo.T.
WestinghouseE.&M.Co.*
Williams App. Co.*

Physical

AmthorTest.Inst.Co.,Inc.*
Atlas Elec. Dev. Co.
Baldwin-SouthwarkCorp.*
Braun Corp.
Buffalo Scale Co., Inc.*
CambridgeInst.Co.,Inc.*
Central Sci. Co.*
Chicago App. Co.*
Curtin&Co.,Inc.,W.H.
Detroit Test. Mach. Co.*
Dietert Co., Harry W.*
Eimer & Amend
Eitzen Co., Louis C.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Kauffman-Lattimer Co.
Mine & Smelter Sup.Co.

TESTING MACHINES

Physical (Cont'd)

Olsen Test. Mach. Co.,
Tinius*
Palo-Myers, Inc.
Perkins & Son, Inc.,
B. F.*
Refinery Supply Co.
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc*
Thwing Inst. Co.*
Toledo Scale Co.*
Walker&Co.,Inc.,Geo.T.
Western Sci. Co.
Wilkens-Anderson Co.

Pipe & Tube

Baldwin-Southwark
Corp.*
Braun Corp.
Gordon Co., Claud S.
Hydraulic Press Mfg.
Co.*
Olsen Test. Mach. Co.,
Tinius*
Riehle Test. Mach. Div.*
Steel City Test. Lab.*
Test. Mach., Inc.*

Proving Instruments

Morehouse Mach. Co.*

Road Material

American Inst. Co.*
Baldwin-Southwark
Corp.*
Braun Corp.
Denver Fire Clay Co.
Eimer & Amend
Fisher Sci. Co.*
Humboldt Mfg. Co.*
Olsen Test. Mach. Co.,
Tinius*
Precision Sci. Co.*
Refinery Supply Co.
Riehle Test. Mach. Div.*
Sargent & Co., E. H.
Teschner-Quinn Corp.
Walker&Co.,Inc.,Geo.T.
Wilkens-Anderson Co.

Rubber

American Inst. Co.*
AmthorTest.Inst.Co.,Inc.*
Atlas Elec. Dev. Co.*
Baldwin-Southwark
Corp.*
Braun Corp.
Eimer & Amend
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Olsen Test. Mach. Co.,
Tinius*
Riehle Test. Mach. Div.*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Teschner-Quinn Corp.
Test. Mach., Inc.*
Walker&Co.,Inc.,Geo.T.
Wilkens-Anderson Co.

Scratch Hardness

Fuess, Inc., R.*
Riehle Test. Mach. Div.*
Testing Mach., Inc.*
Walker&Co.,Inc.,Geo.T.

Sheet Metal

Detroit Test. Mach. Co.*

Tensile
See Physical

Textile

Atlas Elec. Dev. Co.*
Braun Corp.
Eimer & Amend
General Elec. Vapor
Lamp Co.*
Olsen Test. Mach. Co.,
Tinius*
Perkins&Son,Inc.,B.F.*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker&Co.,Inc.,Geo.T.

Thread

Braun Corp.
Cummings Mach. Works*
Eimer & Amend
Gordon Co., Claud S.
Palo-Myers, Inc.
Olsen Test. Mach. Co.,
Tinius*
Scott Co., Henry L.*
Steel City Test. Lab.*
Suter, Alfred*
Test. Mach., Inc.*
Walker&Co.,Inc.,Geo.T.

Torsion

Detroit Test. Mach. Co.*

Washing

Atlas Elec. Dev. Co.*

Weathering

Atlas Elec. Dev. Co.*

TESTING MAGNET

Gordon Co., Claud S.*

TESTING SETS

Camshaft

Scherr Co., George*

Electrical

Riddle Co., James G.
Byram, H. F.
CambridgeInst.Co.,Inc.*
Century Electrical Co.*
Clough-Brengle Co.*
Elec. Facilities, Inc.*
Ferranti Elec., Inc.*
Hickok Elec. Inst. Co.*
KelloggSwitch&SupplyCo.
Leeds & Northrup Co.*
Lewis Eng. Co.*

TESTING SETS

Electrical (Cont'd)

N. J. Lab. Srpply Co.
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Rubicon Co.*
Sargent & Co., E. H.
Shallcross Mfg. Co.*
Supreme Inst. Corp.*
Triplett Elec. Inst. Co.*
Western Elec. Co., Inc.*
Western Elec. Mech.
Co., Inc.*
Western Sci. Co.
WestinghouseE.&M.Co.*
WestonElec.Inst.Corp.*

Electrical Neon

Iittelfuse Labs.*

Electrical Thermometer

Thwing Inst. Co.*

Field

Aloe Co., A. S.
Century Elec. Co.*
Leeds & Northrup Co.*
Lewis Eng. Co.*
Sargent & Co., E. H.
Walker&Co.,Inc.,Geo.T.
Western Sci. Co.

Ground Resistance

Borden Electric Co.*

Hydrogen Ion

Aloe Co., A. S.
American Inst. Co.*
Braun Corp
CambridgeInst.Co.,Inc.*
Central Sci. Co.*
Chicago App. Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Dearborn Chemical Co.*
Denver Fire Clay Co.
Eimer & Amend
Fisher Sci. Co.
Fish-Schurman Corp.*
General Elec. Co.*
GeneralInst.&Con.Co.*
Gilmore Drug Co., W.J.
GreinerCo.,Inc.,OttoR.
Howe & French, Inc.
Kauffman-Lattimer Co.
Lab. Mat. Co.
LaMotteChem.Prod.Co.*
Leeds & Northrup Co.*
N. J. Lab. Supply Co.
Palo-Myers, Inc.*
Pfaltz & Bauer, Inc.
Rascher & Betzold*
Sargent & Co., E. H.
Schaar & Co.
Sensitive Res. Inst. Co.*
Thwing Inst. Co.*
Walker&Co.,Inc.,Geo.T.
Wallace & Tiernan
Products, Inc.
Welch Mfg. Co., W. M.*
Western Sci. Co.
Wilkens-Anderson Co.

Portable Combustion

Hays Corporation*

Telephone

Automatic Elec. Co.*

Water

Aloe Co., A. S.
Braun Corp.
Curtin&Co.,Inc.,W.H.
Dearborn Chem. Co.*
Eimer & Amend
Fisher Sci. Co.
Gilmore Drug Co., W. J.
Greiner Co., Emil*
Greiner Co., Inc., OttoR.
Howe & French, Inc.
Lab. Mat. Co.*
LaMotteChem.Prod.Co.*
Leeds & Northrup Co.*
National Alum. Corp.*
N. J. Lab. ~~Supply Co.~~
Palo-Myers, Inc.*
Refinery Supply Co.
Sargent & Co., E. H.
Teschner-Quinn Corp.
Walker&Co.,Inc.,Geo.T.
Wallace & Tiernan
Prod., Inc.*
Western Sci. Co.
Wilkens-Anderson Co.

TEST WEIGHTS

Buffalo Scale Co., Inc.*
Ainsworth & Sons, Inc.,
Wm.*
American Askania Corp.
Berger & Sons, Inc.,
C. L.*
Bliss & Co., Inc., John
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Eastern Sci. Supply Co.*
Elliott Co., B. K.
Fuess, Inc., R.*
Gurley, W. & L. E.*
Kern Co.
Leupold, Volpel & Co.*
Post Co., Frederick
Warren-Knight Co.*
Zeiss, Inc., Carl

THERMIONIC RECTIFIERS

Couch Co., Inc., S. H.*
General Elec. Co.*
General Radio Co.*
Hy Ef Elec. Prod. Co.*

THERMO-AMMETERS

Etna Elec. Works*
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.

THERMOCOUPLES

Vacuum

Western Elec. Co., Inc.*

THERMO-HYDROMETERS

Braun Corp.
Brown Inst. Co.*
Daigger & Co., A.
General Inst. & Con.Co.
Gray Inst. Co.*
Greiner Co., Emil*
Griebel Inst. Co., Inc.*
H-B Inst. Co., Inc.*
Howe & French, Inc.
Mine & Smelter Sup.Co.
Minn.-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
Pacific Sci. Co.
PrecisionTher.&Inst.Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schultheis Corp., E. W.*
ScientificGlassApp.Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teschner-Quinn Corp.*
Wagner & Son., CarlH.*
Walker&Co.,Inc.,Geo.T.
Weksler Ther. Corp.*

THERMO-JUNCTIONS (ELECTRIC)

Bristol Co.*
Brown Inst. Co.*
Etna Elec. Works*
Ferranti Elec., Inc.*
General Elec. Co.*
General Inst. & Con.Co.
Gray Inst. Co.*
Hickok Elec. Inst. Co.*
Leeds & Northrup Co.*
Lewis Eng. Co.*
Minn.-HoneywellReg.Co.*
Pacific Sci. Co.
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Schultheis Corp., E.W.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
WestonElec.Inst.Corp.*

THERMOMETERS

Dial

H-B Inst. Co., Inc.

Electric Resistance

AmericanTem.Ind Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Chicago App. Co.
Engelhard, Inc., Chas.*
Denver Fire Clay Co.
Foxboro Co.*
General Elec. Co.*
General Inst. & Con.Co.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Illinois Test. Lab., Inc.*
Jensen Inst. Co.
Leeds & Northrup Co.*
Lewis Eng. Co.*
Minn.-HoneywellReg.Co.*
Pacific Sci. Co.
Pyrometer Inst. Co.*
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Thermo Con. Dev., Inc.
Thwing Inst. Co.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Weiss & Son, Albert A.*
WestonElec.Inst.Corp.*

Gas

Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Con. Ashcroft Hancock
Co., Inc.*
Curtin&Co.,Inc.,W.H.
Defender Auto Reg. Co.*
Dickson Co.*
Eclipse Fuel Eng. Co.*
Foxboro Co.*
General Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
GreinerCo.,Inc.,OttoR.*
Kessling Ther. Co., E.*
Marsh Corp., Jas. P.*
Minn.-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Pacific Sci. Co.
Refinery Supply Co.
Republic Flow Met. Co.*
Schaar & Co.
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teltru Inst. Co.*
Teschner-Quinn Corp.
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.

High Range

Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
CambridgeInst.Co.,Inc.*
Consolidated Ashcroft
Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
DefenderAuto.Reg.Co.*
Dickson Co.*
Dodge Co., A. J.*
Eimer & Amend
Elliott Co., B. K.
Empire Lab. Supply Co.,
Inc.*
Faichney Inst. Corp.*
Fevagage Lab.*
Fisher Sci. Co.*

THERMOMETERS

High Range (Cont'd)

Fleischhauer & Son,Fr.*
Foxboro Co.*
General Inst. & Con.Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil*
GreinerCo.,Inc.,OttoR.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.*
Lab. Mat. Co.
Minn.-HoneywellReg Co.*
Moeller Inst. Co., Inc.*
Pacific Sci. Co.
Palo-Myers, Inc.*
Philadelphia Ther. Co.*
PrecisionTher.&Inst.Co.*
Rascher & Betzold*
Refinery Supply Co.
Ruehfel Co., George*
Schaar & Co.
Schultheis Corp., E. W.*
Sci. Glass App. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teltru Inst. Co.*
Teschner-Quinn Corp.
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Western Sci. Co.
Wilkens-Anderson Co.

Industrial

American Ther. Co.*
Bailey Meter Co.*
BakerIceMach.Co.,Inc.
Bauer Ther. Co., Inc.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Consolidated Ashcroft
Hancock Co., Inc.*
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.
Dickson Co.*
Dodge Co., A. J.*
Dwyer Mfg. Co., F. W.
Eclipse Fuel Eng. Co.*
Eimer & Amend
Elliott Co., B. K.
Empire Lab. Supply Co.,
Inc.*
Faichney Inst. Corp.*
Fisher Sci. Co.*
Fevagage Lab.*
Fleischhauer&Son,Fr.*
Foxboro Co.*
Friez&Sons,Inc.,JulienP.*
General Inst. & Con.Co.
Gilmore Drug Co., W.J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil*
GreinerCo.,Inc.,OttoR.*
Greiner Ther. Co.*
Hand&SonsCo.,JohnE.
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Huddleston, J. S. F.*
Inst. Service Co., Inc.*
Jensen Inst. Co.
Lab. Mat. Co.
Leeds & Northrup Co.*
Marsh Corp., Jas. P.*
Minn.-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
Nurnberg Ther. Co.*
Pacific Sci. Co.
Palmer Co.*
Palo-Myers, Inc.*
Partlow Corp.*
Paulstich & Sons, H.*
Philadelphia Ther. Co.*
Powers Reg. Co.*
PrecisionTher.&Inst.Co.*
Pyrometer Inst. Co.*
Refinery Supply Co.
Ruehfel Co., George*
Schultheis Corp., E. W.*
ScientificGlassApp.Co.*
Sci. Inst. Co.*
Standard Sci. Sup.Corp.*
Standard Ther., Inc.*
TagliabueMfg.Co., C.J.*
Taylor Inst. Cos.*
Teltru Inst. Co.*
Teschner-Quinn Corp.
Thermo Con. Dev., Inc.
U. S. Gauge Co.*
Wagner & Son, Carl H.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Weiss & Son, Albert A.*
Wilbin Inst. Corp.*
Wilkens-Anderson Co.

Laboratory

Aloe Co., A. S.
American Inst. Co.*
Bauer Ther. Co., Inc.*
Berg Mfg. Co., James*
Braun Corp.
Bristol Co.*
Chicago App. Co.
Consolidated Ashcroft
Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend*
Empire Lab. Supply Co.,
Inc.*
Faichney Inst. Corp.*
Fevagage Laboratory*
Fisher Sci. Co.*
Fish-Schurman Corp.*
Fleischhauer&Son,Fr.*
Foxboro Co.*
Friez&Sons,Inc.,JulienP.*
Fuess, Inc., R.

THERMOMETERS

Laboratory

General
Gilmore Drug Co.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., OttoR.
Greiner Ther. Co.*
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Huddleston, J. S. F.
Jensen Inst. Co.
Kauffman-Lattimer Co.
Kessling Ther. Co., E.*
Lab. Mat. Co.
Leeds & Northrup Co.*
Leitz, Inc., E.
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
N. Y. Biological Supply
N. Y. Lab. Supply Co., Inc.
Nurnberg Ther. Co.*
Pacific Sci. Co.
Palmer Co.*
Palo-Myers, Inc.*
Percorella Mfg. Co.*
Philadelphia Ther. Co.*
Podbielniak Inst. Re
Eng. Labs.*
PrecisionTher.&Inst.Co.*
Pyrometer Inst. Co.*
Rascher & Betzold*
Refinery Supply Co.
Ruehfel Co., George*
Sargent & Co., E. H.
Schaar & Co.
Schultheis Corp., E. W.*
Sci. Glass App. Co.*
Sci. Inst. Co.*
StandardSci.Sup.Corp.*
Steele, Erick F.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teltru Inst. Co.*
Teschner-Quinn Corp.*
Thermo Con. Dev., Inc.
Wagner&Son,CarlH.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Welch Mfg. Co., W. M.*
Western Sci. Co.
Wilder-Pike Ther. Co.
Inc.
Wilkens-Anderson Co.

Maximum & Minimum

Bauer Ther. Co., Inc.*
Bliss & Co., Inc., John
Braun Corp.
Chicago App. Co.
Curtin & Co.,Inc.,W.H.
Denver Fire Clay Co.
Dwyer Mfg. Co., F. W.
Eimer & Amend*
Elliott Co., B. K.
Empire Lab. Supply Co.,
Inc.*
Faichney Inst. Corp.*
Fevagage Lab.*
Fisher Sci. Co.*
Fleischhauer&Son,Fr.*
Friez&Sons,Inc.,J.P.*
Fuess, Inc., R.
GeneralInst.&Con.Co.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Hand&SonsCo.,JohnE.
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Huddleston, J. S. F.
Jensen Inst. Co.
Kauffman-Lattimer Co.
Lab. Mat. Co.
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
Pacific Sci. Co.
Palmer Co.*
Palo-Myers, Inc.*
Paulstich & Sons, H.*
Phila. Ther. Co.*
PrecisionTher.&Inst.Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schultheis Corp., E. W.*
Scien. Inst. Co.*
StandardSci.Sup.Corp.*
Taylor Inst. Cos.*
Teschner-Quinn Corp.
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Sci. Co.
Wilder-Pike Ther. Co.
Inc.*

Mechanical

Bauer Ther. Co., Inc.*
Braun Corp.
Chicago Inst. Co.*
Chicago Inst. Co.*
Consolidated Ashcroft
Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
DefenderAuto.Reg.Co.*
Elliott Co., B. K.
Fee & Stemwedel, Inc.*
Fleischhauer&Son,Fr.*
Friez&Sons,Inc.,JulienP.*
Gen. Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil

THERMOMETERS
Mechanical (Cont'd)
Greiner Co., Inc., OttoR.*
H-B Inst. Co., Inc.*
Hiergesell & Sons, Wm.*
Jensen Inst. Co.
Moeller Inst. Co., Inc.*
Pacific Sci. Co.
Partlow Corp.*
Paulstich & Sons, H.*
PrecisionTher.&Inst.Co.*
Refinery Supply Co.
RochesterMfg.Co.,Inc.*
Standard Ther., Inc.*
Taylor Inst. Cos.*
U. S. Gauge Co.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Western Sci. Co.
Wilbun Inst. Corp.*

Mercurial
Bauer Ther. Co., Inc.*
Berg Mfg. Co., James*
Bliss & Co., Inc., John
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Chicago App. Co.
Consolidated Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
DefenderAuto.Reg.Co.*
Denver Fire Clay Co.
Dodge Co., A. J.*
Dwyer Mfg. Co., F. W.
Eimer & Amend*
Empire Lab. Supply Co., Inc.*
Faichney Inst. Corp.*
Fevagage Lab.*
Fisher Sci. Co.*
Fleischhauer&Son,Fr.*
Foxboro Co.*
Friez&Sons,Inc.,JulienP.*
Gen. Inst. & Con. Co.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc.,OttoR.*
Greiner Ther. Co.*
Hand&SonsCo.,JohnE.
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell & Sons, Wm.*
Howe & French, Inc.
Huddleston, J. S. F.
Jensen Inst. Co.
Johnson Service Co.*
Kauffman-Lattimer Co.
Kessling Ther. Co., E.*
Lab. Mat. Co.
Macalaster Bicknell Co.
Minn.-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N. J. Lab. Supply Co.
N.Y. Lab. Sup. Co., Inc.
Nurnberg Ther. Co.*
Pacific Sci. Co.
Palmer Co.*
Palo-Myers, Inc.*
Paulstich & Sons, H.*
Pecorella Mfg. Co.*
Phil. Ther. Co.*
Podbielniak Ind. Res. & Eng. Labs.*
PrecisionTher.&Inst.Co.*
Rascher & Betzold*
Refinery Supply Co.
Ruehfel Co., George*
Sargent & Co., E. H.
Schaar & Co.
Schlegelmilch Bros.*
Schultheis Corp., E. W.*
Scien. Glass App. Co.*
Scien. Inst. Co.*
StandardSci.Sup.Corp.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teschner-Quinn Corp.*
Wagner & Son, Carl H.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Weiss & Son., Albert A.*
Welch Mfg. Co., W. M.
Western Sci. Co.
Wilkens-Anderson Co.

Meteorological
Draper Mfg. Co.*
Empire Lab. Supply Co., Inc.*
Fee & Stemwedel, Inc.*
Fleischhauer&Son,Fr.*
Friez&Sons,Inc.,JulienP.*
Fuess, Inc., R.
Gen. Inst. & Con. Co.
Green, Henry J.*
Greene Brothers, Inc.
GreinerCo.,Inc.,OttoR.*
Hiergesell & Sons, Wm.*
Lewis Eng. Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
Pacific Sci. Co.
Phila. Ther. Co.*
PrecisionTher.&Inst.Co.*
Refinery Supply Co.
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Welch Mfg. Co., W. M.
Western Sci. Co.

Vapor Tension
Aeromarine Inst. Co., Inc.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*

THERMOMETERS
Vapor Tension (Cont'd)
Consolidated Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Dickson Co.*
Foxboro Co.*
Gen. Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
GreinerCo.,Inc.,OttoR.*
KollsmanInst.Co.,Inc.*
Marsh Corp., Jas. P.*
Minn.-HoneywellReg.Co.*
Pacific Sci. Co.
Pioneer Inst. Co., Inc.*
Powers Reg. Co.*
Refinery Supply Co.
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
U. S. Gauge Co.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.

Wet & Dry Bulb
AmericanTemp.Ind.Co.*
Bauer Ther. Co., Inc.
Bliss & Co., Inc., John
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Chicago App. Co.
Consolidated Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
Denver Fire Clay Co.
Dickson Co.*
Dwyer Mfg. Co., F. W.
Eimer & Amend*
Elliott Co., B. K.
Engelhard, Inc., Chas.*
Fisher Sci. Co.*
Fleischhauer&Son,Fr.*
Foxboro Co.*
Friez&Sons,Inc.,JulienP.*
Fuess, Inc., R.
Gen. Inst. & Con. Co.
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Green, Henry J.*
Greene Brothers, Inc.
Greiner Co., Ecil*
GreinerCo.,Inc.,OttoR.*
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Hiergesell&Sons,Wm.*
Howe & French, Inc.
Huddleston, J. S. F.*
Jensen Inst. Co.
Kauffman-Lattimer Co.
Lab. Mat. Co.
Leeds & Northrup Co.*
Lewis Eng. Co.*
Minn.-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Negus, T. S. & J. D.
N.J. Laboratory Sup.Co.
N.Y. Lab. Sup.Co.,Inc.*
Pacific Sci. Co.
Palmer Co.*
Palo-Myers, Inc.*
Paulstich & Sons, H.*
Pecorella Mfg. Co.*
Phila. Ther. Co.*
PrecisionTher.&Inst.Co.*
Rascher & Betzold*
Refinery Supply Co.
Sargent & Co., E. H.
Schaar & Co.
SchultheisCorp.,E.W.*
Scien. Inst. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Teltru Inst. Co.*
Walker&Co.,Inc.,Geo.T.
Warren-Knight Co.
Weiss&Son,AlbertA.*
Welch Mfg. Co., W. M.
Western Sci. Co.
White Co., Inc. David
Wilder-Pike Ther. Co., Inc.*
Wilkens-Anderson Co.

THERMOMETER TESTERS
See Testers, Thermometer

THERMOPILES
Biddle Co., James G.
Braun Corp.
CambridgeInst.Co.,Inc.*
Central Sci. Co.*
Denver Fire Clay Co.
Eppley Lab., Inc.*
Gen. Inst. & Con. Co.
Gordon Co., Claud S.
Greene Brothers, Inc.
Hoffman Co., Samuel O.*
Leeds & Northrup Co.
Rawson Elec. Inst. Co.*
Thermo Con. Dev., Inc.*
Thwing Inst. Co.*
Western Sci. Co.

THERMOSTATIC BIMETALS
Chace Valve Co., W.M.*

THERMOSTATS
American Inst. Co.*
American Ther. Co.*
Automatic Products Co.*
Auto. Reclosing Circuit Breaker Co.*
Baker Ice Mach. Co., Inc.*
Braun Corp.
Burling Inst. Co.*
Central Sci. Co.*
Consolidated Ashcroft Hancock Co., Inc.*
Cramer&Co.,Inc.,R.W.
DefenderAuto.Reg.Co.*
Detroit Lub. Co.*
Dickson Co.*
Edison,Inc.,ThomasA.*

THERMOSTATS (Cont'd)
Eimer & Amend
Elec. Con. & Mfg. Co.*
Fisher Sci. Co.*
FriezSons,Inc.,JulienP.*
Fulton Sylphon Co.*
Gamewell Co.*
Gen. Inst. & Con. Co.
Gilmore Drug Co., W.J.
Gray Inst. Co.*
Greene Brothers, Inc.
Griebel Inst. Co., Inc.*
GreinerCo.,Inc.,OttoR.*
Hart Mfg. Co.*
H-B Inst. Co., Inc.*
Heil Chem. Co., Henry
Jensen Inst. Co.
Johnson Service Co.*
Klipfel Mfg. Co.*
Lab. Mat. Co.
LawlerAuto.Con.,Inc.*
Leitz, Inc., E.
Mercoid Corporation*
Morse Mag. Clock Co.*
National Reg. Co.*
N. J. Lab. Supply Co.
N. Y. Lab. Sup.Co.,Inc.
Pacific Sci. Co.
Palo-Myers, Inc.*
Partlow Corp.*
Penn Elec. Switch Co.*
Powers Reg. Co.*
PrecisionTher.&Inst.Co.*
Refinery Supply Co.
Sarco Co., Inc.*
Sargent & Co., E. H.
Savutime Devices, Inc.*
Sheer Co., H. M.*
Scien. Glass App. Co.
Spencer Reg. Co.
Standard Sci. Sup. Corp.
States Co.*
Steele, Erick F.*
Struthers Dunn, Inc.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Thermo Con. Dev., Inc.
Wagner&Son,CarlH.*
Walker&Co.,Inc.,Geo.T.
Welch Mfg. Co., W. M.
Western Elec. Co., Inc.*
Western Sci. Co.
Wilbin Inst. Corp.*
Wilkens-Anderson Co.

THERMO-AMMETERS
Cambridge Inst. Co., Inc.*
Ferranti Elec., Inc.*
General Elec. Co.*
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Hickok Elec. Inst. Co.*
Shallcross Mfg. Co.
WestonElec.Inst.Corp.*

THERMO-VOLTMETERS
Rawson Elec. Inst. Co.*
Roller-Smith Co.*
Sensitive Res. Inst. Co.*
Thermo Con. Dev., Inc.
Welch Mfg. Co., W. M.
Westein Sci. Co.

THICKNESS GAGES
See Gages, Thickness

THREAD LEAD INDICATORS
See Indicators, Thread Lead

THREAD MEASURING WIRES
Van Keuren Co.*

TIDE GAGE
See Gage, Tide

TIME CONTROLS
See Controls, Automatic, Time

TIME INTERVAL APP.
Wallace & Tiernan Co., Inc.*

TIME METERS
General Electric Co.*

TIME OPERATION RECORDERS
See Recorders, Time Operation

TIME RECORDERS
See Recorders, Time

TIMERS
Aristo Import Co., Inc.
Bliss & Co., Inc., John
CambridgeInst.Co.,Inc.*
Cramer&Co.,Inc.,R.W.
Daigger & Co., A.
Dietzgen Co., Eugene
Eagle Signal Corp.*
Eagle Signal Corp.*
Edison,Inc.,ThomasA.*
Elec. Con. & Mfg. Co.*
General Elec. Co.*
Gilmore Drug Co., W.J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Greiner Co., Emil
Hand&SonsCo.,JohnE.
Howard Clock Co., E.*
Leeds & Northrup Co.*
Leland Elec. Co.*
LuxClockMfg.Co.,Inc.*
Mine & Smelter Sup.Co.
Niehoff & Co., C. E.*
Pacific Sci. Co.
Palo-Myers, Inc.
Paragon Elec. Co.
Pastor Stop Watch Co.
Refinery Supply Co.
Sensitive Res. Inst. Co.*
Seth Thomas Clock Co.*
Struthers Dunn, Inc.*
Taylor Inst. Cos.*
Teletouch Corp.*

TIMERS (Cont'd)
Walser Auto. Timer Co.*
Wilkens-Anderson Co.
Walker&Co.,Inc.,Geo.T.
Zenith Elec. Co.*
Zernickow Co., O.

Automatic Reset
Zenith Elec. Co.*

Cycle
Zenith Elec. Co.*

Interval
Zenith Elec. Co.*

Spot Weld
Ward Leonard Elec. Co.*

TIME STAMPS
Auto. Time Stamp Co.*
Parche Time Stamp Co.*
Stromberg Elec. Co.*

SIME SWITCHES
Anderson Mfg. Co., Albert & J. M.*
Auto. Lighting Co.*
Cramer&Co.,Inc.,R.W.
Edison,Inc.,ThomasA.*
Ferranti Elec., Inc.*
Friez&Sons,Inc.,JulienP.*
Gamewell Co.*
General Elec. Co.*
Gordon Co., Claud S.
Jensen Inst. Co.
Landis & Gyr, Inc.
Leland Elec. Co.
Lundquist Tool & Mfg. Co.*
LuxClockMfg.Co.,Inc.*
Mercoid Corporation*
Mine & Smelter Sup.Co.
Pacific Sci. Co.
Paragon Elec. Co.*
Parche Time Stamp Co.*
Penn Elec. Switch Co.*
Sangamo Elec. Co.*
Seth Thomas Clock Co.*
Stand. Elec. Time Co.*
States Co.*
Stromberg Elec. Co.
Teletouch Corp.*
Walker&Co.,Inc.,Geo.T.
Walser Auto. Timer Co.*
Waltham Watch Co.*
WestinghouseE.&M.Co.*
Wilkens-Anderson Co.
Zenith Elec. Co.
Aloe Co., A. S.
Braun Corp.
Central Sci. Co.
Daigger & Co., A.
Eimer & Amend
Fisher Sci. Co.
Gilmore Drug Co., W.J.
Greene Brothers, Inc.
Greiner Co., Emil*
Heil Chem. Co., Henry
N. J. Lab. Supply Co.
Palo-Myers, Inc.*
Refinery Supply Co.
Sargent & Co., E. H.
Scientific Glass Co.
Walker&Co.,Inc.,G.T.
Western Ceientific Co.

TOOLMAKER'S FLATS
Pratt & Whitney Co.*

TOPOGRAPHIC INSTRUMENTS
Leatherman Co., C.M.*

TORQUE GAGE
Martin-Decker Co.*

TORSIOGRAPH
Baldwin-Southwark Corp.
Com. Eng. Labs.

TOTAL CARBON APPARATUS
Parr Inst. Co.*

TOTALIZERS
Running Time
Cramer&Co.,Inc.,R.W.

TRAFFIC SIGNALLING DEVICES
Eagle Signal Corp.*

TRAMMEIS. Steel Beam
Union Tool Co.*

TRANSFORMERS
Central Scientific Co.*
Kellogg Switch. & Sup. Co.*
Mine&SmelterSup.Co.
Welch Mfg. Co., W. M.
Western Elec. Co., Inc.*

Instrument
American Opt. Co.*
American Trans. Co.*
Byram, H. F.
Clough-Brengle Co.*
Couch Co., Inc., S. H.*
Elec. Facilities, Inc.*
Esterline-Angus Co.*
Ferranti Electric, Inc.*
Friez&Sons,Inc.,J.P.
Generaal Elec. Co.*
Gilmore Drug Co., W. J.
Gordon Co., Claud S.
Greene Brothers, Inc.
Hickok Elec. Inst. Co.*
Jefferson Elec. Co.*
Landis & Gyr, Inc.
Roller-Smith Co.*
Sangamo Elec. Co.*
Sargent & Co., E. H.
Schaar & Co.
Sensitive Res. Inst. Co.*
Stan. Elec. Time Co.
Stan.ScientificSup.Corp.
Sticht & Co., H. H.*
West. Elect.-Mech. Co., Inc.*
Western Scientific Co.
WestinghouseE.&M.Co.*
WestonElec.Inst.Corp.*

TRANSFORMERS (Cont'd)
Laboratory
American Trans. Co.*
Byram, H. F.
Chicago Apparatus Co.
Clough-Brengle Co.*
Couch Co., Inc., S. H.*
Dongan Elec. Mfg. Co.*
Elec. Facilities, Inc.*
Ferranti Electric, Inc.*
Friez&Sons,Inc.,J.P.
Gereral Elec. Co.*
General Radio Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil
Jefferson Electric Co.*
Kauffman-Lattimer Co.
N. J. Lab. Supply Co.
Raytheon Mfg. Co.*
Roller-Smith Co.*
Stan. Elec. Time Co.
Walker&Co.,Inc.,G.T.
Western Scientific Co.
Weston Elec. Inst. Corp.*
Wilkens-Anderson Co.

Phasing
Eastern Specialty Co.*

Split Core
Rubicon Co.*

TRANSITS
Ainsworth & Sons, Inc., Wm.*
Beckman Co., L.*
Berger&Sons,Inc.,C.L.*
Bruning Co., Inc., Chas.
Buff & Buff Mfg. Co.*
Dietzgen Co., Eugene*
Eastern Sci. Sup. Co.*
Elliott Co., B. K.*
Gaertner Scientific Corp.*
Kern Co.
Keuffel & Esser Co.*
Kolesch & Co.*
Leupold, Volpel & Co.*
Pitts. Inst. & Mach. Co.*
Soltmann, Inc., E. G.*
Starrett Co., L. S.*
Bliss & Co., Inc., J.
Ulmer Co., J. C.*
Warren Knight Co.*
Western Scientific Co.
Zeiss, Inc., Carl

Pocket
Ainsworth & Sons, Inc., Wm.*

TRIANGLES
Shop
Van Keuren Co.*

TUBES
Colorimeter
LuertzingGlassInst.Co.*

Distilling
LuertzingGlassInst.Co.*

Drying
LuertzingGlassInst.Co.*

Filter
LuertzingGlassInst.Co.*

Nessler
LuertzingGlassInst.Co.*

Oil Centrifuge
LuertzingGlassInst.Co.*

Venturi
Bailey Meter Co.*
Binckley Geo. Sydeny*
Builders Iron Foundry*
Eclipse Fuel Eng. Co.*
GeneralInst.&Con.Co.
Pioneer Inst. Co., Inc.*
Refineery Supply Co.
Simplex V. & M. Co.*
Sperry Gyroscope Co., Inc.*
Water Wks. Sup. Co.*

TUNING FORKS
Marietta Apparatus Co.
Riverbank Labs.*
Walker&Co.,Inc.,G.T.

Electrically Driven
Braun Corp.
Central Scientific Co.*
CambridgeInst.Co.,Inc.*
Ferner Co., R. Y.
GaertnerScientificCorp.*
General Electric Co.*
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Leeds & Northrup Co.*
Welch Mfg. Co., W. M.*
Western Scientific Co.

TURBIDIMETER
American Inst. Co.*
Central Scientific Co.
Curtin&Co.,Inc.,W.H.
Daigger & Co., A.
Denver Fire Clay Co.
Eimer & Amend
Gilmore Drug Co., W. J.
Grener Co., Emil*
Heil Chem. Co., Henry
Howe & French, Inc.
Kauffman-Lattimer Co.
Parr Inst. Co.*
Precision Sci. Co.*
Rawson Elec. Inst. Co.*
Refinery Supply Co.
Sargent & Co., E. H.
Walker&Co.,Inc.,G.T.
Wallace & Tiernan Products, Inc.
Western Scientific Co.
Wilkens-Anderson Co.
Zeiss, Inc., Carl

TURN INDICATOR TESTERS
See Testers, Turn Indicator

TWIST COUNTERS
See Counters, Twist

ULTRA-VIOLET LIGHT TUBES
General Phy. Lab.*

U-TUBE MANOMETERS
Amer. Met. Co., Inc.*
BacharachIndInst.Co.*
Bailey Meter Co.*
Braun Corp.
Bristol Co.*
Brown Inst. Co.*
Builders Iron Foundry*
Central Scientific Co.*
Connelly Iron S. & G. Co.*
Con. Ashcroft Hancock Co., Inc.*
Curtin&Co.,Inc.,W.H.
DefenderAuto.Reg.Co.*
Denver Fire Clay Co.
Dwyer Mfg. Co., F. W.*
Eimer & Amend*
Fisher Scientific Co.*
Fish-Schurman Corp.*
Foxboro Co.*
Fuess, Inc., R.
GeneralInst.&Con.Co.
Gilmore Drug Co., W. J.
Greene Brothers, Inc.
Greiner Co., Emil*
Greiner Co., Inc., O. R.*
Hays Corp.*
H-B Inst. Co., Inc.*
Hiergesell & Sons, W.*
Howe & French, Inc.
Jensen Inst. Co.*
Macalaster Bicknell Co.*
Machlett & Son, E.*
Meriam Co.*
Milwaukee Glass Wks., Inc.*
Mine&SmelterSup.Co.
Minn.-HoneywellReg.Co.*
Moeller Inst. Co., Inc.*
Morey & Jones, Ltd.*
N. J. Lab. Supply Co.
N. Y. Lab. Sup. Co., Inc.
Pacific Scientific Co.
Parks, Jr., Harry S.*
Pitts. Equt. Meter Co.*
Podbielniak Ind. Res. & Eng. Labs.*
Precision Scientific Co.*
Pre. Ther. & Inst. Co.*
Refinery Supply Co.*
Sargent & Co., E. H.
Sci. Glass App. Co.*
Superior Meter Co., Inc.*
Teltru Inst. Co.*
Walker&Co., Inc., G. T.
Wallace & Tiernan Products, Inc.*
Water Wks. Supply Co.
Welch Mfg. Co., W. M.*
Western Scientific Co.
Wilkens-Anderson Co.

VACUUM GAGE
See Gage, Vacuum

VACUUM RECORDERS
See Recorders, Vacuum

VACUUM SPECTROGRAPHS
See Spectrographs, Vacuum

VACUUM TUBE BRIDGES
See Bridges, Vacuum Tube

VACUUM TUBE RELAYS
See Relays, Vacuum Tube

VACUUM TUBE VOLTMETERS
See Voltmeters, Vacuum Tube

VALVES
Ammonia & SO2
Wallace & Tiernan Co., Inc.*

Automatic Shut-Off
Amer. Meter Co., Inc.*
Atwood & Morrill Co.*
Automatic Prod. Co.*
Auto. Switch. Co.*
Auto. Valve Con. Co.*
Baker Ice Mach. Co., Inc.*
Braun Corp.
Brown Instrument Co.*
Davis Regulator Co.*
Eclipse Fuel Eng. Co.*
Foster Eng. Co.*
Frick Co.*
General Con. Co.*
GeneralInst.&Con.Co.
Greene Brothers, Inc.
Jensen Inst. Co.
Lawler Auto. Con., Inc.*
McAlear Mfg. Co.*
Minn.-HoneywellReg.Co.*
Nat. Airoil Burner Co.*
Pacific Scientific Co.
Plouff Co.*
Reynolds Gas Reg. Co.*
R-S Products Corp.*
Schutte & Koerting Co.*
Spencer Ther. Co.*
TagliabueMfg.Co.,C.J.*
Taylor Inst. Cos.*
Toledo Scale Co.*
Water Wks. Supply Co.

Automatic Solonoid
R-S Prod. Corp.*

VALVES (Cont'd)

Back Pressure

- Amer. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Cash Co., A. W.*
- Connelly Iron S. & G. Co.*
- Davis Reg. Co.*
- Eclipse Fuel Eng. Co.*
- Fisher Governor Co.*
- Foster Eng. Co.*
- GeneralInst.&Con.Co.
- Greene Brothers, Inc.
- Hydraulic Press Mfg. Co.*
- Klipfel Mfg. Co.*
- McAlear Mfg. Co.*
- Mercon Reg. Co.*
- Neptune Meter Co.*
- Pacific Scientific Co.
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Refinery Supply Co.
- Refrigerating Spec. Co.*
- Reynolds Gas Reg. Co.*
- Schutte & Koerting Co.
- Smoot Eng. Corp.*
- Taylor Inst. Cos.*
- Water Wks. Supply Co.
- Wilgus Mfg. Co.*

Balanced

- Amer. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Baldwin-Southwark Corp.*
- Braun Corp.
- Brown Inst. Co.*
- Cash Co., A. W.*
- Connelly Iron S. & G. Co.*
- Con. Ashcroft Hancock Co., Inc.*
- Davis Reg. Co.*
- Defender Auto. Reg Co.*
- Eclipse Fuel Eng. Co.*
- Fisher Governor Co.*
- Foster Eng. Co.*
- General Controls Co.*
- GeneralInst.&Con.Co.
- Greene Brothers, Inc.
- Hydraulic Press Mfg. Co.*
- Klipfel Mfg. Co.*
- Leeds & Northrup Co.
- McAlear Mfg. Co.*
- Min HoneywellReg.Co.*
- Nathan Mfg. Co.*
- Northern Equip. Co.*
- Pacific Scientific Co.
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Reynolds Gas Reg. Co.*
- Schutte & Koerting Co.*
- Taylor Inst. Cos.*
- Water Wks. Supply Co.
- Wilgus Mfg. Co.*

Blow-Off

- Con. Ashcroft Hancock Co., Inc.*
- Crosby Steam G. & V. Co.*
- Eclipse Fuel Eng. Co.*
- Fairbanks Co.*
- Greene Brothers, Inc.
- Pitts. Equit. Meter Co.*
- Nathan Mfg. Co.*
- Plouff Co.*
- Reynolds Gas Reg. Co.*
- Smith Weld. Equip. Corp.*
- Taylor Inst. Cos.*
- Water Wks. Supply Co.
- Yarnall-Waring Co.*

Check Valves

- Trill Indicator Co.*

Chlorine

- Wallace Tiernan Co., Inc.*

Compressed Gas

- Wallace & Tiernan Co., Inc.*

Constant Pressure

- Amer. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Bailey Meter Co.*
- Baker Ice Mach. Co., Inc.*
- Baldwin-Southwark Corp.*
- Bastian Blessing Co.*
- Cash Co., A. W.*
- Connelly Iron S. & G. Co.*
- Con. Ashcroft Hancock Co., Inc.*
- Davis Regulator Co.*
- Eclipse Fuel Eng. Co.*
- Fisher Governor Co.*
- Foster Eng. Co.*
- GeneralInst.&Con.Co.
- Gilmore Drug Co., W. J.
- Greene Brothers, Inc.
- Hoke, Inc.*
- Holzapfel Inst. Co.*
- Klipfel Mfg. Co.*
- McAlear Mfg. Co.*
- Mercon Reg. Co.*
- Northern Equip. Co.*
- Pacific Scientific Co.
- Penn Elec. Switch Co.*
- Plouff Co.*
- Refinery Supply Co.
- Refrigerating Spec. Co.*
- Reynolds Gas Reg. Co.*
- Schutte & Koerting Co.*
- TagliabueMfg.Co.,C.J.*
- Taylor Inst. Cos.*
- Wallace & Tiernan Products, Inc.*
- Water Wks. Supply Co.
- Wilgus Mfg. Co.*

VALVES (Cont'd)

Diaphragm

- Amer. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Bailey Meter Co.
- Baker Ice Mach. Co., Inc.*
- Baldwin-Southwark Corp.*
- Bastian Blessing Co.*
- Braun Corp.
- Bristol Co.*
- Cash Co., A. W.*
- Connelly Iron S. & G. Co.*
- Con. Ashcroft Hancock Co., Inc.*
- Curtin&Co.,Inc.,W.H.
- Davis Regulator Co.*
- DefenderAuto.Reg.Co.*
- D'Este Co., Julian*
- Eclipse Fuel Eng. Co.*
- Elgin Softener Corp.*
- Fisher Governor Co.*
- Foster Eng. Co.*
- Fulton Sylphon Co.*
- General Controls Co.*
- GeneralInst.&Con.Co.
- Greene Brothers, Inc.
- Hoke, Inc.*
- Johnson Service Co.*
- Klipfel Mfg. Co.*
- McAlear Mfg. Co.*
- Nathan Mfg. Co.*
- National Reg. Co.*
- Northern Equip. Co.*
- Partlow Corp.*
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Podbielniak Ind. Res. & Eng. Labs.*
- Refinery Supply Co.
- Refrigerating Spec. Co.*
- Reynolds Gas Reg. Co.*
- Schutte & Koerting Co.*
- TagliabueMfg.Co.,C.J.*
- Taylor Inst. Cos.*
- Wallace & Tiernan Products, Inc.*
- Water Wks. Supply Co.
- Wilgus Mfg. Co.*

Differential

- Amer. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Bailey Meter Co.*
- Baldwin-Southwark Corp.*
- Cash Co., A. W.*
- Davis Regulator Co.*
- DefenderAuto.Reg.Co.*
- D'Este Co., Julian*
- Fisher Governor Co.*
- Foster Eng. Co.*
- Gamewell Co.
- GeneralInst.&Con.Co.
- Greene Brothers, Inc.
- Klipfel Mfg. Co.*
- McAlear Mfg. Co.*
- Mercon Reg. Co.*
- Northern Equip. Co.*
- Pacific Scientific Co.
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Refinery Supply Co.
- Reynolds Gas Reg. Co.*
- Schutte & Koerting Co.*
- Smoot Eng. Corp.*
- Taylor Inst. Cos.*
- Water Wks. Supply Co.
- Wilgus Mfg. Co.*

Electrically Operated

- Automatic Prod. Co.*
- Auto. Switch Co.*
- Bailey Meter Co.*
- Baldwin-Southwark Corp.*
- Bristol Co.*
- Brooke Eng. Co., Inc.*
- Brown Inst. Co.*
- Cramer&Co.,Inc.,R.W.
- Cutler-Hammer, Inc.*
- Davis Regulator Co.*
- DefenderAuto.Reg.Co.*
- Detroit Lub. Co.*
- Dickson Co.*
- Eclipse Fuel Eng. Co.*
- Fairbanks Co.*
- Foxbor Co.
- Frick Co.*
- Friez&Sons,Inc.,J.P.*
- Futon Sylphon Co.*
- General Controls Co.*
- General Electric Co.*
- GeneralInst.&Con.Co.
- Greene Brothers, Inc.
- Hydraulic Press Mfg. Co.*
- Jensen Inst. Co.
- Klipfel Mfg. Co.*
- Leeds & Northrup Co.
- McAlear Mfg. Co.*
- Minn-HoneywellReg.Co.*
- Northern Equip. Co.*
- Pacific Scientific Co.
- Permutit Co.*
- Pitts. Equit Meter. Co.*
- Plouff Co.*
- Podbielniak Ind. Res. & Eng. Labs.*
- Refrigerating Spec. Co.*
- Ross Oper. Valve Co.*
- R-S Products Corp.*
- Savutime Devices, Inc.*
- Schutte & Koerting Co.*
- Shallcross Con., Inc.*
- Sheer Co., H. M.*
- Stan. Elec. Time Co.
- Taylor Inst. Cos.*
- Toledo Scale Co.*
- Wallace & Tiernan Products, Inc.*
- Water Wks. Supply Co.
- Wilbin Inst. Corp.*

VALVES (Cont'd)

High Pressure Neeedle

- Parr Inst. Co.*

Indicating Oil Firing

- Nat. Airoil Burner Co.*

Indicating Steam Control

- Nat. Airoil Burner Co.*

Motor Operated

- Atwood & Morrill Co.*
- Automatic Products Co.*
- Bailey Meter Co.*
- Baldwin-Southwark Corp.*
- Braun Corp.
- Bristol Co.*
- Brooke Eng. Co., Inc.*
- Brown Inst. Co.*
- Cramer&Co.,Inc.,R.W.
- Cutler-Hammer, Inc.*
- Davis Regulator Co.*
- DefenderAuto.Reg.Co.*
- Detroit Lubricator Co.*
- Dickson Co.*
- Eclipse Fuel Eng. Co.*
- Elgin Softener Corp.*
- Fairbanks Co.*
- Fisher Governor Co.*
- Foxbor Co.*
- Friez&Son,Inc.,J.P.
- General Controls Co.*
- GeneralInst.&Con.Co.
- Greene Brothers, Inc.
- Jensen Inst. Co.
- Klipfel Mfg. Co.*
- Leeds & Northrup Co.
- McAlear Mfg. Co.*
- Minn-HoneywellReg.Co.*
- Northern Equip. Co.*
- Pacific Scientific Co.
- Permutit Co.*
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- R-S Products Corp.*
- Schutte & Koerting Co.*
- Shallcross Con., Inc.*
- Sheer Co., H. M.*
- States Co.*
- Taylor Inst. Cos.*
- Wallace & Tiernan Products, Inc.*
- Water Wks. Supply Co.
- Wilbin Inst. Corp.*

Needle

- American Meter Co.*

Pressure Relief

- Amer. Meter Co., Inc.*
- Bailey Meter Co.*
- Baldwin-Southwark Corp.*
- Binckley, Geo. Sydney*
- Cash Co., A. W.*
- Connelly Iron S. & G. Co.*
- Con. Ashcroft Hancock Co., Inc.*
- Crosby Steam G. & V. Co.*
- Curtin&Co.,Inc.,W.H.
- Davis Reg. Co.*
- DefenderAuto.Reg.Co.*
- D'Este Co., Julian*
- Eclipse Fuel Eng. Co.*
- Fisher Governor Co.*
- Foster Eng. Co.*
- Frick Co.*
- General Con. Co.*
- Greene Brothers, Inc.
- Hoke, Inc.*
- Holzapfel Inst. Co.*
- Hydraulic Press Mfg. Co.*
- Johnston&JenningsCo.*
- Klipfel Mfg. Co.*
- Lonergan Co., J. E.*
- McAlear Mfg. Co.*
- Mercon Regulator Co.*
- Neptune Meter Co.*
- Northern Equip. Co.*
- Penn Elec. Switch Co.*
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Refinery Supply Co.
- Refrigerating Spec. Co.*
- Sargent & Co., E. H.
- Reynolds Gas Reg. Co.*
- R-S Prod. Corp.*
- Schutte & Koerting Co.*
- Star Brass Mfg. Co.*
- Taylor Inst. Cos.*
- U. S. Gauge Co.*
- Water Wks. Supply Co.
- Watts Regulator Co.*
- Wilgus Mfg. Co.*

Proportional Air-Gas

- American Gas Fur. Co.*
- Bailey Meter Co.*
- Brooke Eng. Co., Inc.*
- Brown Inst. Co.*
- Cutler-Hammer, Inc.*
- Dickson Co.*
- Eclipse Fuel Eng. Co.*
- Elgin Softener Corp.*
- Fisher Governor Co.*
- McAlear Mfg. Co.*
- Minn-HoneywellReg.Co.*
- Reynolds Gas Reg. Co.*
- Schutte & Koerting Co.*
- Wilgus Mfg. Co.*

Reducing

- Amera. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Bailey Meter Co.
- Bastian Blessing Co.*
- Brooke Eng. Co., Inc.*
- Cash Co., A. W.
- Con. Ashcroft Hancock Co., Inc.*
- Davis Regulator Co.*
- DefenderAuto.Reg.Co.*
- D'Este Co., Julian*
- Fisher Governor Co.*
- Ford Reg. V. Co., Inc.*

VALVES

Reducing (Cont'd)

- Foster Eng. Co.*
- Foxbor Co.
- Fulton Sylphon Co.*
- GeneralInst.&Con:Co.
- Gilmore Drug Co., W. J.
- Greene Brothers, Inc.
- Hoke, Inc.*
- Holzapfel Inst. Co.*
- Hydraulic Press Mfg. Co.*
- Klipfel Mfg. Co.*
- McAlear Mfg. Co.*
- Mercon Reg. Co.*
- Mine Safety App. Co.*
- Northern Equip. Co.*
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Refinery Supply Co.
- Reynolds Gas Reg. Co.*
- Sargent & Co., E. H.
- Schutte & Koerting Co.*
- Smoot Eng. Corp.*
- Taylor Inst. Cos.*
- Walker&Co.,Inc.,G.T.
- Wallace & Tiernan Products, Inc.*
- Water Wks. Supply Co.
- Watts Regulator Co.*
- Wilgus Mfg. Co.*
- Wilkens-Anderson Co.

Refrigeration

- Refrigerating Spec. Co.*

Regulating

- American Gas Fur. Co.*
- Amer. Meter Co., Inc.*
- Atwood & Morrill Co.*
- Bailey Meter Co.*
- Baker Ice Mach. Co., Inc.*
- Baldwin- Southwark Corp.*
- Bastian Blessing Co.*
- Brown Inst. Co.*
- Cash Co., A. W.*
- Connelly Iron S. & G. Co.*
- Con. Ashcroft Hancock Co., Inc.*
- Davis Regulator Co.*
- DefenderAuto.Reg.Co.*
- D'Este Co., Julian*
- Dickson Co.*
- Fisher Governor Co.*
- Ford Reg. V. Co., Inc.*
- Foster Eng. Co.*
- Fulton Sylphon Co.*
- eGneral Controls Co.*
- GeneralInst.&Con.Co.
- Gilmore Drug Co., W. J.
- Greene Brothers, Inc.
- H-B Inst. Co., Inc.
- Hoke, Inc.*
- Holzapfel Inst. Co.*
- Hydraulic Press Mfg. Co.*
- Johnson Service Co.*
- Klipfel Mfg. Co.*
- Lawler Auto. Con., Inc.*
- McAlear Mfg. Co.*
- McDonnell & Miller*
- Mercon Reg. Co.*
- Mine Safety App. Co.*
- Minn-HoneywellReg.Co.*
- Nat. Airoil Burner Co.*
- Northern Equip. Co.*
- Penn Elec. Switch Co.*
- Pitts. Equit. Meter Co.*
- Plouff Co.*
- Refinery Supply Co.
- Reynolds Gas Reg. Co.*
- R-S Prod. Corp.*
- Sargent & Co., E. H.
- Schutte & Koerting Co.*
- Smoot Eng. Corp.*
- TagliabueMfg.Co.,C.J.*
- Taylor Inst. Cos.*
- Union Water Met. Co.*
- Walker&Co.,Inc.,G.T.
- Wallace & Tiernan Products, Inc.*
- Water Wks. Supply Co.
- Wilbin Inst. Corp.*
- Wilgus Mfg. Co.*
- Wilkens-Anderson Co.

Safety Fuel Shut-Off

- Bastian Blessing Co.*
- Brown Inst. Co.*
- Connelly Iron S. & G. Co.*
- Davis Regulator Co.*
- Eclipse Fuel Eng. Co.*
- Fulton Sylphon Co.*
- General Con. Co.*
- Greeene Brothers, Inc.
- McAlear Mfg. Co.*
- McDonnell & Miller*
- Minn-HoneywellReg.Co.*
- Nat. Airoil Burner Co.*
- Northern Equip. Co.*
- Partlow Corp.*
- Schutte & Koerting Co.*
- R-S Products Corp.*
- Wilgus Mfg. Co.*

Solenoid

- Auto. Prod. Co.*

Thermostat

- Baker Ice Mach Co., inc.*
- Bristol Co.*
- Brown Inst. Co.*
- Con. Ashcroft Hancock Co., Inc.*
- D'Este Co., Julian*
- Detroit Lubricator Co.*
- Dickson Co.*
- Friez&Sons,Inc.,J.P.*
- Fulton Sylphon Co.*
- GeneralInst.&Con.Co.
- H-B Inst. Co., Inc.
- Jensen Inst. Co.
- Johnson Service Co.*

VALVES

Thermostat (Cont'd)

- Klipfel Mfg. Co.*
- Lawler Auto. Con., Inc.*
- Minn-HoneywellReg.Co.*
- National Reg. Co.*
- N. J. Lab. Supply Co.
- Pacific Scientific Co.
- Partlow Corp.*
- Plouff o.*
- Refinery Supply Co.
- Sarco Co., Inc.*
- Sargent & Co., E. H.
- Sheer Co., H. M.*
- Taylor Inst. Cos.*
- Trane Co.*
- Water Wks. Supply Co.
- Western Scientific Co.
- Wilbin Inst. Corp.*

Water Motor Operated

- Area Regulators, Inc.*

VALVE BOX FINDER

- Clark Co., H. W.*
- Globe Phone Mfg. Co.*

VEHICLE TRAVEL RECORDERS

See Recorders, Vehicle Travel

VENTURI METERS

See Meters, Venturi

VENTURI TUBES

See Tubes, eVnturi

VIBROGRAPH

- American Askania Corp.
- Baldwin-Southwark Corp.
- CambridgeInst.Co.,Inc.*
- Central Scientific Co.*
- Com. Eng. Labs.
- Impact Register Co.*
- Kauffman-Lattimer Co.
- Ohmer Fare Reg. Co.*
- Western Scientific Co.
- Welch Mfg. Co., W. M.*

VIBROMETER

- American Askania Corp.
- Com. Eng. Labs.
- Electrocon Corp.*
- Ohmer Fare Reg. Co.*
- Pioneer Inst. Co., Inc.*
- Sperry Gyroscope Co., Inc.*
- OlsenTest.Mach.Co.,T.*

VIBROSCOPE

- Com. Eng. Labs.
- Electrocon Corp.*
- OlsenTest.Mach.Co.,T.*

VICAT NEEDLE

- Braun Corp.
- Central Scientific Co.
- Curtin&Co.,Inc.,W.H.
- Denver Fire Clay Co.
- Eimer & Amend
- EmpireLab.Sup.Co.,Inc.
- Fisher Scientific Co.*
- Gilmore Drug Co., W. J.
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FOREWARN Detector for Locating Hidden Weapons—Paul W. Koch & Co.
FOSTER Testing Machines—Tinius Olsen Testing Machine Co.
FRAHM Tachometers and Frequency Meters—James G. Biddle Co.
FREY Stop Watches—Clebar Watch Co.
FRICKE-GLASSER Dosimeter — Victoreen Instrument Co.
FYRESTAN Thermocouple Protection Tubes—Leeds & Northrup Co.
GALVATRON Temperature Recorder—Bailey Meter Co.
GARDINER MOBILOMETER—Fisher Scientific Co.
GATTY Aircraft Drift Indicator—W. & L. E. Gurley
GEC Glass Instruments—Glass Engraving Co.
GEIGER Vibrograph & Torsiograph—Baldwin-Southwark Corp.
G.E. Life Test of Transformer Oil Apparatus—Eimer & Amend
GEM Adding Machine—Automatic Adding Machine Mfg.
GEM Water Meter—National Meter Co.
GENUINE DETROIT Controls—Detroit Lubricator Co.
GEOPHONE Leak Detector—Globe Phone Mfg. Corp.
GERAETE Low Expansion Glass—Fish Schurman Corp.
GLAN-THOMSON Prisms—Bryden Co.
GOODELL-PRATT Measuring Tools—Millers Falls Co.
GRAF SUPER-LUMO Lenses—General Scientific Corp.
GREGORY Test Car Column—Refinery Supply Co.
GRIFFIN Gas Meters—American Meter Co.
GROUND-OHMERS—Herman H. Sticht & Co.
GROUNDOMETER—Borden Electric Co.
HANCO Control Valves—Refrigerating Specialties Co.
HANCOCK Valves—Consolidated Ashcroft-Hancock Co., Inc.
HANDICOIL—Eastern Science Supply Co.
HARDFORD Scales—Knowles Scale Works
HARSPAR Depth Gages—Harry S. Parks, Jr.
HASLER Speed Indicating Instrument—R. W. Cramer & Co., Inc.
HAZEGAGE—Ess Instrument Co.
HILL CO., E. VERNON—Teltru Instrument Co.
HI-WAY Measuring Tapes—Lufkin Rule Co.
H-K Directional Magnetic Clinograph—Sperry-Sun Well Surveying Co.
HOEPPLER Viscosimeter—Fish-Schurman Corp.
HORTVET Cryoscope—Eimer & Amend
HUBODOMETER—Ohmer Fare Register Co.
HUGGENBERGER Tensometer—Baldwin-Southwark Corp.
HUMIDOSTAT Humidity Control Instrument—Johnson Service Co.
HUMITEX Recorder Charts—Foxboro Co.
HUMITROL Humidity Control—Lewis Air Conditioners, Inc.
HUNT'S Cement Fineness Shaker—Humboldt Mfg. Co.
HYDRO Pressure Recorders & Gas Flow Meters—Bacharach Industrial Inst. Co.
HYDRON Bellows—Clifford Mfg. Co.
HYGROSTAT Hygrometers—Parks-Cramer Co.
HY-SPEED Bottle Filling Machines—Alsop Engineering Co.
INDUCTOR Voltage Regulators—Leland Electric Co.
INDUSTRIAL ANALYZER Test Set—Westinghouse Elec. & Mfg. Co.
INFILCO Liquid Meters & Controls—International Filter Co.
IRONCLAD Dry Gas Meters—Pittsburgh Equitable Meter Co.
ISO-ELASTIC Scales—John Chatillon & Sons
ISOMETER Flow Meters—Elgin Softener Corp.
ISO-SEAL Scales—John Chatillon & Sons
J & L Comparators & Measuring Machines—Jones & Lamson Machine Co.
JACKSON Turbidimeters—Eimer & Amend
JAGABI Speed-measuring Instruments & Rheostats—James G. Biddle Co.
JENA Glass—Fish-Schurman Corp.
JENA HIPPEL Capillary Type High Pressure Mercury Vapor Lamp—Fish-Schurman Corp.
JEWELL Electrical Instruments — Weston Electrical Inst. Corp.
JONES Scales—Binghamton Scale Mfg. Co., Inc.
JUERST Ebulliometer—Eimer & Amend
K & S Pyrometers—Industrial Pyrometer Co.
KASSON Relay Timers—Rawson Electrical Instrument Co.
K-BRAND Glassware—Kimble Glass Co.
KELEKET X-Ray Equipment—Kelley-Koett Mfg. Co., Inc.
KENOLITE Projection Lenses—Kollmorgen Optical Co.
KESEK Thermometers—E. Kessling Thermometer Co.
KING Water Meter—Union Water Meter Co.
KIRSCHBRAUN-HUMBOLDT Adhesion Machine—Humboldt Mfg. Co.
KLIXON Thermostats—Spencer Thermostat Co.

KNOPP Meter Testing Equipment—Electrical Facilities, Inc.
KOLLEGIATE Glassware—Kimble Glass Co.
KON-NECTOR Mercury Switches — General Electric Vapor Lamp Co.
KONTAX Mercury Switches—Leland Electric Co.
K-S Telegage—King-Seeley Corp.
LANPHIER CALOROPTIC — Connelly Iron Sponge & Governor Co.
LAUNDEROMETER Washing Action Tester — Atlas Electric Devices Co.
LEA V-Notch Liquid Meter—Yarnall-Waring Co.
LEIBOFF CHOLESTEROL Apparatus — Empire Lab. Supply Co., Inc.
LEMAG Engine Indicator—Baldwin-Southwark Corp.
LEVELOMETERS Level Indicators—Liquidometer Corp.
LEWIS Testing Machines—Tinius Olsen Testing Machine Co.
LIGHT METER Illumination Indicator—Westinghouse Elec. & Mfg. Co.
LIGHTNING Speed Indicators—McDonnell Odometer Co.
LOSENHAUSENWERK Testing Machines—Alfred Suter
LOWELL STANDARD Scales—Knowles Scale Works
L-P Co. Thermometer—Wilder-Pike Thermometer Co., Inc.
LUCAS Chain Tapes—J. C. Ulmer Co.
LUMOTRON Photo Electric Cells & Grid Glow Tubes—General Scientific Corp.
LUNDGREN Testing Machines—Tinius Olsen Testing Machine Co.
LUSH Cable Testers—Rawson Electrical Instrument Co.
MacMICHAEL Viscometer—Eimer & Amend
MAGNETRIC Automotive Clock—Jaeger Watch Co., Inc.
MAGNUM Optical Systems for Sound Reproduction—General Scientific Corp.
MAIHAK Engine Indicator—Bacharach Industrial Instrument Co.
MARYLAND Gas Meters—American Meter Co.
MASTER HEAT Damper Regulator—White Mfg. Co.
MAXIGRAPH Graphic Demand Meter—Landis & Gyr, Inc.
McCOLLUM Earth Curent Meters—Rawson Electrical Instrument Co.
McCULLOM-PETERS Strain Gages—Baldwin-Southwark Corp.
McDONALD Gas Meters—American Meter Co.
McILHENNY Gas Meters—American Meter Co.
McLAURIN Gummed Tape Tester—Thwing Instrument Co.
MEGGER Insulation Testing Instruments—James G. Biddle Co.
MEGGERS Megohmmeters — Electrical Inst. & Eng. Co., Inc.
MEG Insulation Testers & Ground Testers—James G. Biddle Co.
MERCO Valve Lubricants—Pittsburgh Equitable Meter Co.
MESCO Consistency Regulators—Merritt Eng. & Sales Co., Inc.
METALLUS Microscope—Clay Adams Co., Inc.
METALSCOPE Microscope—Wilkens-Andersen Co.
METERMAX Combustion Control—Leeds & Northrup Co.
METRIC Gas Meters—American Meter Co.
MICHIGAN Measuring Tapes—Lufkin Rule Co.
MICROFIEX Reset Timer—Eagle Signal Corp.
MICROLUX Mirror Comparator—Marburg Brothers, Inc.
MICROMAX Indicators, Recorders & Controllers—Leeds & Northrup Co.
MIDGET Controls—Eagle Signal Corp.
MIKROTAST—Coats Machine Tool Co., Inc.
MILGLAS Laboratory Apparatus — Milwaukee Glass Works, Inc.
MINUTE MINDER Timer—Walser Automatic Timer Co.
MJL Flowmeter—Morey & Jones, Ltd.
MONOGRAM Control Valves—Refrigerating Specialties Co.
MOORE Strain Gage—Baldwin-Southwark Corp.
MOTOSCOPES Automotive Testing Instruments—Stromberg Motoscope Corp.
MUDWATE Hydrometer for Testing Mud—Braun Corp.
MULLEN Bursting Testers—B. F. Perkins & Sons, Inc.
MULTIFLEX Reset Timer—Eagle Signal Corp.
MULTIMETERS—Rawson Electrical Instrument Co.
NALCO Water Test Sets—National Aluminate Corp.
NASH Water Meter—National Meter Co.
NAVCO Coin-Operated Scales—Barnes Products, Inc.
NEUTRAGLASS—A. S. Aloe Co.
NILO Velocity Meter—Union Water Meter Co.
NON-CORROSIVE Pressure & Vacuum Gages — Star Brass Mfg. Co.
NORDSTROM Lubricated Valves—Pittsburgh Equitable Meter Co.
NORMAX Glassware—Kimble Glass Co.
OHAUS Scales—Newark Scale Works, Inc.
O'KILL Diesel Engine Compression Gages—Harry S. Parks, Jr.
OPACUS Microscope—Clay Adams Co., Inc.
OPTIMETER Gage—George Scherr Co.
OPTOTEST Gage—George Scherr Co.
ORANGE TOOL LINE Rules—Union Tool Co.
OSGOOD Scales—Binghamton Scale Mfg. Co., Inc.
OSISI Oscillographs—Westinghouse Elec. & Mfg. Co.
OTO Orthotolidin Testing Outfit—Wallace & Tiernan Products, Inc.
OXWELD Portable Tensile Tester—Baldwin-Southwark Corp.
PACIFIC Gas Meters—American Meter Co.
PARAGON Megohmers—Herman H. Sticht & Co.
PARFAIT Time Stamp—Parche Time Stamp Co.
PARKSON Gear Testing Machine—George Scherr Co.
PASSIMETER Gage—George Scherr Co.
PAY-A-DAY Coin Controlled Timing Device—Landis & Gyr, Inc.
PECCO Thermometers—Pecorella Mfg. Co.
PENESCOPE Penetration Tester—Thwing Instrument Co.
PERFEX Binoculars—Testrite Instrument Co.
PETIT Optical Systems for Sound Reproduction—General Scientific Corp.
PFUND Cryptometer—Munsell Color Co., Inc.
PHOTOPOLYGRAPH Lie Detector—C. H. Stoelting Co.
PHOTO-TROLLERS Controllers—Westinghouse Elec. & Mfg. Co.
PHOTOX Photo Voltaic Cell—Westinghouse Elec. & Mfg. Co.
PHOTRONIC Electrical Instruments & Cell—Weston Electrical Inst. Corp.
PICKOMETERS Pick Counter Clock—Waltham Watch Co.
PIONEER Measuring Tapes—Lufkin Rule Co.
PIONEER Transits—Kolesch & Co.
PITTSCHNER Electrometric Hydrogen Ion Apparatus—Eimer & Amend
PORTLAND Counters—Adde & Co.
POLYMETER Electric Instruments—Sensitive Research Inst. Corp.
POWERSTAT Automatic Gas Pilot Control—Mercoid Corp.
PRECISION Electrical Instrument Co.—Amperite Corp.
PRESTOMETER—Coats Machine Tool Co., Inc.
PRICE Current Meter—W. & L. E. Gurley
PRINCO Thermometers—Precision Thermometer & Inst. Co.
PRITCHARD Portable Assay Balances—Braun Corp.
PRODUCTIMETERS Counters—Durant Mfg. Co.
PROMAR Microscope—Clay Adams Co., Inc.
PROMI Microscope—Clay Adams Co., Inc.
PSYCHODOMETER Reaction Time Tester—C. H. Stoelting Co.
PSYCHROSTAT Hygrometers—Parks-Cramer Co.
PW Pneumatic Tank Control—Water Level Controls Co.
PYKNOTRON Boiler Feed Water Hydrometer—Stromberg Motoscope Corp.
PYRATHERM Combustion Controls—Mercoid Corp.
PYREX Brand Glassware—Corning Glass Works
PYRO Pyrometers—Pyrometer Instrument Co.
PYRO LANCE Pyrometers—Illinois Testing Laboratories, Inc.
PYRO POINT Pyrometers—Illinois Testing Laboratories, Inc.
PYRO PROD Pyrometers—Illinois Testing Laboratories, Inc.
PYROCON Pyrometers—Illinois Testing Laboratories, Inc.
PYROLL Pyrometers—Illinois Testing Laboratories, Inc.
PYROPORCELAIN Pyrometer Protection Tubes—Thwing Instrument Co.
Q-METER Radio Frequency Meter—Boonton Radio Corp.
QUANTROLS Meters—Ralph N. Brodie Co., Inc.
QUEEN Scientific Instruments—Gray Instrument Co.
RANAREX Gas Indicators & Recorders—Permutit Co.
RANCO Thermostats — Automatic Reclosing Circuit Breaker Co.
R. D. Smoothness, and Stiffness Tester Paper—W. & L. E. Gurley
RECORDOGRAF Records Motor Vehicles—Ohmer Fare Register Co.
RECORD-O-STAT Temperature Recorder—Johnson Service Co.
RECTIGON Battery Chargers—Westinghouse Elec. & Mfg. Co.
RECTOX Trickle Chargers—Westinghouse Elec. & Mfg. Co.
RED END Rules—Lufkin Rule Co.
RED HEAD Oil Gages—Boston Auto Gage Co.
RED JEWEL LINE Compass—Stat Compass Co.
RED SEAL Glassware—Specialty Glass Co.
RED TOP Thermo-regulators—H-B Instrument Co., Inc.
REGO Regulators—Bastian Blessing Co.
REID Vapor Pressure Bomb—Refinery Supply Co.
RELIABLE Measuring Tapes—Lufkin Rule Co.
RELIANCE Regulators—American Meter Co.
RELIANCE Tachometers—Barbour-Stockwell Co.
RESISTOMETER Resistance Thermometer Checking—Thwing Instrument Co.
RESTRAINED DIAPHRAGM Pressure Gages—Rochester Manufacturing Co., Inc.
REYMAN Relays—Etna Electric Works
RIBOHM Resistances—Ward Leonard Electric Co.
RISERTHERM Surface Type Temperature Control—Mercoid Corp.
RIVAL Measuring Tapes—Lufkin Rule Co.
ROBERTSON-THOMPSON Engine Indicator—Jas. L. Robertson 3rd
ROCKWELL Hardness Testers—Wilson Mechanical Inst. Co., Inc.
ROCO Counters—Veeder-Root, Inc.
ROOT Counters—Veeder-Root, Inc.
ROTAMETER Flow Meter—Schutte & Koerting Co.
ROTAX Controller—Foxboro Co.
ROTO-TEST Switches—Meter Devices Co.
ROTO-TROL Liquid Level Control—Water Level Controls Co.
ROYAL BERLIN Porcelain Works—Fish-Schurman Corp.
R. S. Oil Instruments—Refinery Supply Co.
RYAN Combustion Controls—R-S Products Corp.
SAFTROL Stack Safety Control—Penn Electric Switch Co.
ST. JOHN Steam Flow Meter — American District Steam Co.
SATTLER Time Operation Recorder—Durant Mfg. Co.
S & C Voltage Detector—Schweitzer & Conrad, Inc.
SAUTER Time Switches—R. W. Cramer & Co., Inc.
SAUVEUR Torsion Creep Apparatus—Baldwin-Southwark Corp.
SAVAGE Impact Register—Impact Register Co.
SCALEOMETERS Liquid Level Indicators—Liquidometer Corp.
SCHOPPER, LOUIS, Paper Testers—Testing Machines, Inc.
SCHOTT & GENOSEN Glass—Fish-Schurman Corp.
SCHOTT JENA Optical Glass—Fish-Schurman Corp.
SCHUSTER Thickness Gage—Magnetic Gauge Co.
SCHWEITERMAN Center Finder—Precision Gage & Tool Co.
SEERITE Magnifiers—Testrite Instrument Co.
SEKO Balances—Sederer-Kohlbusch, Inc.
SELECTIVE ANALYZER Radio Test Instrument—Weston Electrical Inst. Corp.
SENSATHERM Thermostat—Mercoid Corp.
SENSITROL Electrical Instruments—Weston Electrical Instrument Corp.
SERIGRAPH Testing Machine—Henry L. Scott Co.
SERVICEMAN Portable Potentiometer—Lewis Engineering Co.
SERVIS Time Operation Recorder—Service Recorder Co.
SHAW Hydraulic Mercury Gages—Harry S. Parks, Jr.
SIGHT-METER Photometer—Sight Light Corp.
SIMPLEX Controls—Eagle Signal Corp.
SOLEX Lenses—Kollmorgen Optical Corp.
SONOFONE Leak Detector—H. W. Clark Co.
SOS Hydrometers—Chaslyn Co.
SOUTHWARK-EMERY Testing Machine—Baldwin-Southwark Corp.
SOUTHWARK-HEYDEKAMPF Testing Machine—Baldwin-Southwark Corp.
SMITH EMERY Tank Samplers—Braun Corp.
SMITH Telescopic Solar Attachment—W. & L. E. Gurley
SMOKGAGE—Ess Instrument Co.
SMOKOMETER—Ess Instrument Co.
SNAPLITE Lenses—Kollmorgen Optical Corp.
SPEEDOMAX High Speed Recorder—Leeds & Northrup Co.
STABILFLO Valve—Foxboro Co.
STABILOG System—Foxboro Co.
STANDCO Megohmers—Herman H. Sticht & Co.
STANLEY Speed Variator—Merritt Engineering & Sales Co., Inc.
STAR PATHFINDER Compass—Star Compass Co.
STAT-A-MATIC Switches—States Co.
STATISCOPES Line Potential Tester—Minerallac Electric Co.
STERLING Measuring Tapes—Lufkin Rule Co.
STERLING Stop Watch—Pastor Stop Watch Co.
STERLING Surveying Instruments—Warren Knight Co.
STEVENS Water Level Recorders—Leupold, Volpel & Co.
STEWART Counting Chambers—Williams, Brown & Earle, Inc.
STROBOGLOW Stroboscope — Westinghouse Elec. & Mfg. Co.
STROBORAMA Stroboscope—Stroboscope Corp.
STROBOTAC Tachometer—General Radio Co.
SUPER-DAVOHM Resistances—Daven Co.
SUPER-OHM Resistances—Daven Co.
SUPERSTEEL Pressure Gages—Star Brass Mfg. Co.
SUPREMAX Glass—Fish-Schurman Corp.
SURWELL Gyroscopic Clinograph — Sperry-Sun Well Surveying Co.
SUVANT Paper Stiffness Testers—Wilson Mechanical Inst. Co., Inc.
SWANN Quadrant Electrometers—Precise Instrument Co., Inc.
SYFO Clinograph—Sperry-Sun Well Surveying Co.
SYLPHON Thermostats—Fulton Sylphon Co.
SYNCHROPULSE Synchronous Timer—Eagle Signal Corp.
SYNCHRO-SIMPLEX Controls—Eagle Signal Corp.
TACHOGRAF—Ohmer Fare Register Co.
TAG—C. J. Tagliabue Mfg. Co.
TAMPAGAGE Laboratory Thermometers—Fevagage Lab.
TAPALOG Pyrometer Recorder—Foxboro Co.
TASCO Slide Rules—Tavella Sales Co.
TATTELITES Neon Testers—Littelfuse Labs.
TAYLOR Crusher—Humboldt Mfg. Co.
TEL Hasler Speed Indicators—R. W. Cramer & Co., Inc.
TELCAM Hasler Speed Indicators—R. W. Cramer & Co., Inc.
TELECHRON Synchronous Motors—Warren Telechron Co.
TELECOLOR Color Comparator—Hays Labs.
TELMOT Hasler Speed Indicators—R. W. Cramer & Co., Inc.
TEMTROL Thermostat—Penn Electric Switch Co.
TENSILGRAPH Testing Machine—Henry L. Scott Co.
TESCO Apparatus—Eastern Specialty Co.
TETCO Tachometer—Electric Tachometer Corp.
THELCO Laboratory Ovens—Freas Thermo Electric Co.
THERMO LANCE Pyrometer—Illinois Testing Laboratories, Inc.
THERMO POINT Pyrometers—Illinois Testing Laboratories, Inc.
THERMOHM Electrical Resistance Thermometer—Leeds & Northrup Co.
THERMOSEAL Scales—John Chatillon & Sons
THERMOTRON Hydrometer—Stromberg Motoscope Corp.
THERMOTUBE Radiation Pyrometer—Leeds & Northrup Co.
THOMAS Meters—Cutler-Hammer, Inc.
THOMPSON Steam Gage Protector—Boiler Equipment Supply Co.
TIMETROL Time Switch—Penn Electric Switch Co.
TIMING LIGHT Ignition Timer—Stromberg Motoscope Corp.
TOOL-O-METER Air Meter—New Jersey Meter Co.
TRANS-O-METER Transmittancy Indicator—Westinghouse Elec. & Mfg. Co.
TREASURE CHEST Pyrometer Checking Set—Thwing Instrument Co.
TRIPOLITIS Strain Gage—Baldwin-Southwark Corp.
TRIUMPH Oil Gages—Boston Auto Gage Co.
TRIVECTOR KVA Hour Meter—Landis & Gyr, Inc.
TRUTEMP Thermometers—Weksler Thermometer Corp.
TRU-VAC Vacuum Gages—Continental Electric Co.
TUBECHECKER Radio Tube Checker—Weston Electrical Inst. Corp.

(Continued on Page 29)

Names and Addresses of Companies Selling Instruments and Devices Used for Measurement, Inspection, Testing and Automatic Control

A

Accurate Pyrometric Cone Co., Pastaskala, Ohio.
Adde & Co., 57 Kennebec St., Portland, Maine.
Aero Instrument Co., P.O. Box 2752, Cleveland, Ohio.
Aeromarine Instrument Co., 370 Girard Ave., New York, N. Y.
Ainsworth & Sons, Wm., 2151 Lawrence St., Denver, Colo.
Akatos, Inc., 55 Van Dam Street, Cor. Varick St., New York, N. Y.
Allen-Bradley Co., Milwaukee, Wis.
Aloe Co., A. S., 1819 Olive St., St. Louis, Mo.
Alpha-Lux Co., Inc., 192 Front St., New York, N. Y.
Alsop Engineering Co., 47 West 63rd St., New York, N. Y.
Altender & Sons, Theo., 1219 Spring Garden St., Philadelphia, Pa.
American Askania Co., 1603 So. Michigan, Chicago, Ill.
American Blower Co., 6000 Russell St., Detroit, Mich.
American District Steam Co., North Tonawanda, N. Y.
American Gas Furnace Co., Lafayette, Spring & Elizabeth Sts., Elizabeth, N. J.
American Instrument Co., 774 Girard St., N. W., Washington, D. C.
American Liquid Meter Co., Alhambra, Calif.
American Meter Co., 60 E. 42nd St., Room 2925, New York, N. Y.
American Optical Co., Southbridge, Massachusetts.
American Paulin System, 1847 South Flower St., Los Angeles, California.
American Temperature Indicating Co., 1017 Summit St., Toledo, Ohio.
American Thermometer Co., 2907 Clark Ave., St. Louis, Mo.
American Transformer Co., 178 Emmet St., Newark, N. J.
Ames Co., B. C., Waltham, Mass.
Amperite Corp., 561 Broadway, New York, N. Y.
Amthor Testing Instrument Co., 10 Leo Pl., Brooklyn, N. Y.
Anderson, Albert & J. M., 289 A Street, Boston, Mass.
Arca Regulators, Inc., 111 Orange St., Bloomfield, N. J.
Aristo Import Co., Inc., 12 John St., New York, N. Y.
Arma Engineering Co., Inc., 254 36th St., Brooklyn, N. Y.
Atlantic Precision Co., 61 Sherman St., Malden, Mass.
Atlas Car & Mfg. Co., 1100-1144 Ivanhoe Road, Cleveland, Ohio.
Atlas Electric Devices Co., 361 West Superior St., Chicago, Ill.
Atwood & Morrill, 48 Loring Ave., Salem, Mass.
Au & Son., Carl H., 1009 E. Street S. E., Washington, D. C.
Automatic Adding Machine Mfrs., 63 West 24th Street, New York, N. Y.
Automatic Electric Co., 1033 W. Van Buren St., Chicago, Ill.
Automatic Lighting Co., 831 Greenmount Ave., Baltimore, Md.
Automatic Musical Instrument Co., 1500 Union Ave., S. E., Grand Rapids, Mich.
Automatic Products Co., 121 North Broadway, Milwaukee, Wisc.
Automatic Recording Circuit Breaker Co., Sixth & Indianola Ave., Columbus, Ohio.
Automatic Switch Co., 154 Grand St., New York, N. Y.
Automatic Temperature Control Co., 34 E. Logan St., Philadelphia, Pa.
Automatic Time Stamp Co., 139 Atlantic Ave., Boston, Mass.
Automatic Weighing Machine Co., 591 Hudson St., New York, N. Y.

B

Bacharach Industrial Inst. Co., 7000 Bennett St., Pittsburgh, Pa.
Badger Meter Mfg. Co., 2371 W. 30 St., Milwaukee, Wisc.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio.
Baker Compass Co., Melrose, Mass.
Baker Ice Machine Co., Key-Baker & 16th St., Omaha, Neb.
Baldwin-Southwark Corp., Paschall Sta., Philadelphia, Pa.
Barber-Colman Co., Rockford, Ill.
Barbaur Stockwell Co., 205 Broadway, Cambridge, Mass.
Barnes Products, Inc., 6521 John R St., Detroit, Mich.
Barnstead Still & Sterilizer Co., 2 Lanesville Terrace, Forest Hills, Boston, Mass.
Bastian-Blessing Co., 240 E. Ontario St., Chicago, Ill.
Batcher, Ralph R., 113-35 198th St., Hollis, Long Island, N. Y.
Bath & Co., Inc., John, 18 Grafton St., Worcester, Mass.
Bauer Thermometer Co., Inc., 332 W. 21st St., New York, N. Y.
Baum Co., Inc., W. A., 100 Fifth Avenue, New York, N. Y.
Bausch & Lomb Optical Co., 663 St. Paul St., Rochester, N. Y.
Bear Mfg. Company, Rock Island, Ill.
Beard Tool Co., L. O., Water & Andrew St., Lancaster, Pa.
Beckmann Co., L., 1008 Jackson, Toledo, Ohio.
Becton, Dickinson & Co., Rutherford, N. J.
Bender Warrick Corp., 534 So. Woodward Ave., Birmingham, Mich.
Berg Mfg. Co., James, 3707 12th Avenue, Brooklyn, N. Y.
Berger & Sons, Inc., C. L., 37 Williams St., Roxbury, Boston, Mass.
Bicknell-Thomas Co., 90 Wells St., Greenfield, Mass.
Biddle Co., James G., 1211 Arch St., Philadelphia, Pa.
Binckley, George Sydney, 857 South San Pedro St., Los Angeles, Calif.
Binghamton Scale Mfg. Co., 40 Shear St., Binghamton, N. Y.
Biological Supply Co., 1176 Mount Hope Ave., Rochester, N. Y.
Bishop & Babcock Mfg. Co., 15 Hamilton Ave., Cleveland, Ohio.
Bliss & Co., Inc., John, 84 Pearl St., New York, N. Y.
Bock Machine Co., 3618 Colerain Ave., Cincinnati, Ohio.
Bodine Electric Co., Oakley Blvd. & Ohio St., Chicago, Ill.
Boekel & Co., Wm., 509-519 Vine St., Philadelphia, Pa.
Boiler Equipment Supply Co., 2321 S. Walker St., Oklahoma City, Okla.
Boonton Radio Corporation, Boonton, N. J.
Borden Electric Co., Summit, N. J.
Boston Auto Gage Co., 68 West St., Pittsfield, Mass.
Bowser & Co., Inc., S. F., 1230 Bowser Ave., Fort Wayne, Ind.
Braun Corp., 363 New High Street, Los Angeles, Calif.
Braun-Knecht-Heimann Co., 576-584 Mission St., San Francisco, Calif.
Bristol Co., Waterbury, Conn.
Brodie Co., Ralph N., 948 61st St., Oakland, Calif.
Brooke Engineering Co., Inc., 175 W. Huntington St., Philadelphia, Pa.
Brown Instrument Co., 4482 Wayne Ave., Philadelphia, Pa.
Brown & Sharpe Mfg. Co., Providence, R. I.
Bruning Co., Inc., Charles, 102 Reade St., New York, N. Y.
Bryden Co., 96 Church St., Waltham, Mass.
Buff & Buff Mfg. Co., 98 Green St., Jamaica Plain, Boston, Mass.
Buffalo Meter Co., 2917 Main St., Buffalo, N. Y.
Buffalo Scale Co., Inc., Buffalo, N. Y.
Builders Iron Foundry, 9 Rodding St., Providence, R. I.
Bullard Co., E. D., 275 Eighth St., San Francisco, Calif.
Bultman Co., F. H., 10271 Berea Rd., Cleveland, Ohio.
Bunnell Co., Inc., J. H., 215 Fulton St., Brooklyn, N. Y.
Burgess Labs., Inc., C. F., Freeport, Ill.
Burling Instrument Co., 185 Market St., Newark, N. J.
Burrell Technical Supply Co., 1942 Fifth Ave., Pittsburgh, Pa.
Burt Scientific Labs., R. C., 211 Clay St., Pasadena, Calif.
Byram, H. F., 28 Bathgate Place, Newark, N. J.

C

Calculagraph Co., Harrison, N. J.
Calibron Products, Inc., 51 Lakeside Ave., West Orange, N. J.
Cambosco Scientific Co., Waverley, Mass.
Cambridge Instrument Co., Inc., Grand Central Terminal, New York, N. Y.
Carrick Engineering Co., Michigan City, Ind.
Carver, Fred S., 345 Hudson St., New York, N. Y.
Cash Company, A. W., P.O. Box 575, Decatur, Ill.
Central Scientific Co., 1700 Irving Park Boulevard, Chicago, Ill.
Central Station Steam Co., 2910 E. Woodbridge St., Detroit, Mich.
Century Electrical Co., 100-102 Randall Ave., Syracuse, N. Y.
Chace Valve Co., W. M., 1609 Beard Ave., Detroit, Mich.
Chaplin-Fulton Mfg. Co., 28-36 Penn Ave., Pittsburgh, Pa.
Chaslyn Company, 4527 Ravenswood Ave., Chicago, Ill.
Chatillon & Sons, John, 85 Cliff St., New York, N. Y.
Chemical Rubber Co., West 112th St. & Locust St., Cleveland, Ohio.
Chicago Apparatus Co., 1735 N. Ashland Ave., Chicago, Ill.
Chicago Instrument Co., 549 W. Washington St., Chicago, Ill.
Clark Blast Meter, Chas. J., Gladbrook, Iowa.
Cincinnati Time Recorder Co., 1733 Central Ave., Cincinnati, Ohio.
Claflin Co., Geo. L., 72-78 N. Main St., Providence, R. I.
Clardon Corp., 502 M & T Bldg., Buffalo, N. Y.
Clark Co., H. W., Mattoon, Ill.
Clark & Sons, Inc., Alvan, 50 Henry St., Cambridge, Mass.
Clay-Adams Co., Inc., 25 E. 26th St., New York, N. Y.
Clebar Watch Co., Inc., 551 Fifth Ave., New York, N. Y.
Cleveland Gas Meter Co., 2180 East 65th St., Cleveland, Ohio.
Clifford Manufacturing Co., 564 East First St., Boston, Mass.
Clough-Brengle Co., 1134 W. Austin Ave., Chicago, Ill.
Coats Machine Tool Co., Inc., 110 W. 40th St., New York, N. Y.
Cochrane Corp., 17th St. below Allegheny Ave., Philadelphia, Pa.
Commercial Engineering Labs., 4612 Woodward Ave., Detroit, Mich.
Commercial Instrument Corp., Meriden, Conn.
Comptor Company, 87 Rumford Ave., Waltham, Mass.
Conant, George H., 719 Watson St., Ripon, Wis.
Connecticut Telephone & Electric Corp., 70 Britannia St., Meriden, Conn.
Connelly Iron Sponge & Governor Co., 3154 S. California Ave., Chicago, Ill.
Consolidated Ashcroft Hancock Co., Inc., Elias St., Bridgeport, Conn.
Consolidated Wire & Associated Corp., 512 So. Peoria St., Chicago, Ill.
Continental Electric Co., St. Charles, Ill.
Cook Electric Co., 2700 Southport Ave., Chicago, Ill.
Coors Porcelain Co., Golden, Colo.
Cornell Dubilier Corp., 4377 Bronx Blvd., New York, N. Y.
Corning Glass Works, Corning, N. Y.
Cory Corp., Chas., 754 Lexington Ave., Brooklyn, N. Y.
Couch Co., Inc., S. H., 3 Arlington St., North Quincy, Mass.
Cramer & Co., Inc., R. W., 6769 Irving Place & 18th, New York, N. Y.
Cresent Engineering Co., 1205 East 25th St., Baltimore, Md.
Crosby Steam Gage & Valve Co., 10 Roland St., Boston, Mass.
Crowley & Co., Henry L., 1 Central Ave., W. Orange, N. J.
Cummings Machine Works, 255 Atlantic Ave., Boston, Mass.
Curtin & Co., W. H., 2019 Franklin Ave., Houston, Texas.
Cutler-Hammer Mfg. Co., 1230 St. Paul Ave., Milwaukee, Wis.

D

Daigger & Co., A., 159 W. Kinzie St., Chicago, Ill.
Daven Company, 158 Summit St., Newark, N. J.
Davis Emergency Equipment Co., Inc., 57 Van Dam St., New York, N. Y.
Davis Regulator Co., 2541 So. Washtenaw Ave., Pilsen Station, Chicago, Ill.
Dearborn Chemical Co., 310 South Michigan Ave., Chicago, Ill.
Decker Corp., Martin, P.O. Box 571, Long Beach, Calif.
Defender Automatic Regulator Co., 308 South 8th St., St. Louis, Mo.
Denver Fire Clay Co., P. O. Box 1107, Denver, Colo.
D'Este Co., Julian, 26 Canal St., Boston, Mass.
Detroit Lubricator Co., 5842 Trumbull Ave., Detroit, Mich.
Detroit Testing Machine Co., 5137 Trumbull Ave., Detroit, Mich.
Dickson Company, 7420 Woodlawn Ave., Chicago, Ill.
Dietert, Harry W., 676 W. Grand Blvd., Detroit, Mich.
Dietzen Co., Eugene, 2425 Sheffield Ave., Chicago, Ill.

Dodge Co., Robert J., Petersboro, N. H.
Doerr Glass Co., Inc., 500 Peach St., Vineland, N. J.
Duncan Electric Mfg. Co., 2987 Franklin St., Detroit, Mich.
Draper Mfg. Co., 45 Warren St., New York, N. Y.
Driftmeter, Inc., 616 Exchange Bank Bldg., Tulsa, Okla.
Dubrowin, John, 4250 N. Kedvale Ave., Chicago, Ill.
Dubuar Rooney, Inc., 207 Water St., New York, N. Y.
Ducasse, F., 25 West 54th Street, New York, N. Y.
Dumont Labs., Allen B., 542 Valley Rd., Upper Montclair, N. J.
Durant Mfg. Co., 1925 Buffam St., Milwaukee, Wisc.
Dwyer Mfg. Co., F. W., 565 W. Washington, Chicago, Ill.

E

Eastern Specialty Co., 3551 North Fifth St., Philadelphia, Pa.
Eagle Signal Corp., 202 20th Street, Moline, Ill.
Eastern Science Supply Co., 7-9 High Street, Brookline, Mass.
Eberbach & Sons, Ann Arbor, Mich.
Eclipse Aviation Corp., 545 North Arlington Ave., East Orange, N. J.
Eclipse Fuel Engineering Co., 814 S. Main St., Rockford, Ill.
Economy Electric Devices Co., 37 W. Van Buren St., Chicago, Ill.
Edelmann & Co., E., 2332 Logan Blvd., Chicago, Ill.
Edison Electrical Controls Division, Thomas A. Edison, Inc., West Orange, N. J.
Eimer & Amend, Third Ave., 18th to 19th St., New York, N. Y.
Eitzen Co., Louis C., 204 W. 59th St., New York, N. Y.
Electric Controller & Mfg. Co., 2700 E. 79th St., Cleveland, Ohio.
Electric Heat Control Apparatus Co., 141 Fifth Ave., New York, N. Y.
Electric Instrument & Engineering Co., 1013 Winter St., Philadelphia, Pa.
Electric Specialty Co., Stamford, Conn.
Electric Tachometer Corp., S. E. Cor. Broad & Spring Garden, Philadelphia, Pa.
Electrical Facilities Inc., 3712 San Pablo Ave., Oakland, Calif.
Electronic Products Co., Saint Charles, Ill.
Electroeon Corp., 6 Varick St., New York, N. Y.
Elgin National Watch Co., Elgin, Ill.
Elliott Co., B. K., 126 Sixth St., Pittsburgh, Pa.
Ellison Draft Gage Co., 214 West Kenzie St., Chicago, Ill.
Emerson Apparatus Co., 171 Tremont St., Melrose, Mass.
Empire Laboratory Supply Co., 549 W. 132nd St., New York, N. Y.
Engelhard, Inc., Charles, 90 Chestnut St., Newark, N. J.
Eppley Laboratory, 12 Sheffield Ave., Newport, R. I.
Ess Instrument Co., 30 Church St., New York, N. Y.
Esterline-Angus Co., Indianapolis, Ind.
Etna Electric Works, 410 East 15th St., New York, N. Y.
Exact Weight Scale Co., 944 West 5th St., Columbus, Ohio.

F

Faichney Instrument Corp., Watertown, N. Y.
Fairbanks Co., 393 Lafayette St., New York, N. Y.
Fairbanks & Co., E. & T., St. Johnsburg, Vt.
Fairbanks, Morse Co., Inc., 900 S. Wabash Ave., Chicago, Ill.
Farrel-Birmingham Co., Inc., 25 Main St., Ansonia, Conn.
Fecker, J. W., 1954 Perrysville Ave., Pittsburgh, Pa.
Federal Instrument Corp., 325 Classon Ave., Brooklyn, N. Y.
Federal Products Corp., 1144 Eddy St., Providence, R. I.
Fee & Stemwedel, Inc., 221 W. Chicago Ave., Chicago, Ill.
Felt & Tarrant Mfg. Co., 1735 N. Paulina St., Chicago, Ill.
Ferner Co., R. Y., 161 Devonshire St., Boston, Mass.
Ferranti, Inc., 130 W. 42nd St., New York, N. Y.
Ferris Instrument Corp., Boonton, N. J.
Fevagage Laboratory, 458 Main St., New Rochelle, N. Y.
Fisher Governor Co., Marshalltown, Iowa.
Fisher Scientific Co., 709-711 Forbes St., Pittsburgh, Pa.
Fish-Schurman Co., 230 East 45th Street, New York, N. Y.
Ford Instrument Co., Rawson Street, Long Island City, N. Y.
Ford Meter Box Co., Wabash, Ind.
Ford Motor Co., Johansson Div., Dearborn, Mich.
Ford Regulator Valve Co., 403 Broome St., New York, N. Y.
Fortney Mfg. Co., 253 Norfolk St., Newark, N. J.
Foster Engineering Co., 109 Monroe St., Newark, N. J.
Foxboro Co., Inc., Foxboro, Mass.
Fox Engineering Co., 36 Portland St., Boston, Mass.
Fleischhauer & Son, Frank, 8936 187th Pl., Hollis, L. I., N. Y.
Frank, K., 90 West Street, New York, N. Y.
Freas Thermo Electric Co., 1206 S. Grove St., Irvington, N. J.
Free Labs., E. E., 175 Fifth Ave., New York, N. Y.
Frick Company, Inc., Waynesboro, Pa.
Friez & Sons, Inc., Julien P., Baltimore St. & Central Ave., Baltimore, Md.
Fuess, Inc., R., 245 West 55th St., New York, N. Y.
Fulton Sylphon Co., Knoxville, Tenn.

G

Gaertner Scientific Corp., 1201 Wrightwood Ave., Chicago, Ill.
Gamewell Co., Newton, Mass.
Gaston Scale Co., 715 Second St., Beloit, Wis.
Geier & Bluhm, Inc., 607 River St., Troy, N. Y.
General Biological Supply House, 761 E. 69th Place, Chicago, Ill.
General Controls Co., Ltd., 1539 Folsom St., San Francisco, Calif.
General Electric Co., Schenectady, N. Y.
General Electric Vapor Lamp Co., 410 Eight St., Hoboken, N. J.
General Electric X-Ray Corp., 2012 Jackson Blvd., Chicago, Ill.
General Electronics Corp., 70 Brookline Ave., Boston, Mass.
General Instruments & Controls Co., 205 W. Wacker Drive, Chicago, Ill.
General Physical Laboratory, 509 Fifth Ave., New York, N. Y.
General Plate Company, Attleboro, Mass.
General Radio Co., 30 State St., Cambridge, A. Mass.
General Scientific Corp., 4829 S. Kedzie Ave., Chicago, Ill.
Gilbert & Barker Mfg. Co., Springfield, Mass.
Gilmore, E. R., 214 E. 1st St., Topeka, Kans.
Gilmore Drug Co., W. J., 422 Blvd. of the Allies, Pittsburgh, Pa.
Glass Engraving Co., 3604-3606 Park Ave., New York, N. Y.
Globe Phone Mfg. Co., 2 Linden St., Reading, Mass.
Globe Tool & Engineering Co., 400 Davis Ave., Dayton, Ohio.
Gogan Machine Corp., 1440 E. 55th St., Cleveland, Ohio.
Gordon Co., Claud S., 708 W. Madison St., Chicago, Ill.
G-M Laboratories, Inc., 1731-1735 Belmont Ave., Chicago, Ill.
Gray Instrument Co., 64-70 W. Johnson St., Philadelphia, Pa.
Green, Arthur B., 249 Harris Ave., Needham, Mass.
Green, Henry J., 1191 Bedford Ave., Brooklyn, N. Y.
Greene Bros., Inc., 1810-14 Griffin St., Dallas, Texas.
Greiner, Inc., Emil, 55 Vandam St., New York, N. Y.
Greiner Co., Otto R., 55 Plane St., Newark, N. J.
Greiner Thermometer Co., 3604-3606 Park Ave., New York, N. Y.
Griebel Instrument Co., 42 River St., Carbondale, Pa.
Gurley, W. & L. E., 514 Fulton St., Troy, N. Y.

H

Hagan Corporation, 600 Bowman Bldg., Pittsburgh, Pa.
Haines Gauge Co., 119 South 4th St., Philadelphia, Pa.
Hammond Clock Co., 2911 N. Western Ave., Chicago, Ill.
Hand & Co., John E., 208 Chestnut St., Philadelphia, Pa.
Hardwick, Hindle, Inc., 40 Herman St., Newark, N. J.
Hart Mfg. Co., R. E., 220 Ward Bldg., Battle Creek, Mich.
Hart Mfg. Co., 230 Hamilton St., Hartford, Conn.
Hasler-Tel Company, 461 8th Ave., New York, N. Y.
Hays Corp., P. O. Box 299, Michigan City, Ind.
Hays Labs., Box 659, Pawtucket, R. I.
Hayes Machine Co., J. B., Urbana, Ill.
H-B Instrument Co., 2518 N. Broad St., Philadelphia, Pa.
Heil Chemical & Mfg. Co., 216 South 4th St., St. Louis, Mo.
Heise Bourdon Tube Laboratories, 275 Noble Avenue, Bridgeport, Conn.
Hellige, Inc., 179 East 87th St., New York, N. Y.
Henschel & Co., Inc., Chas. J., 143 Liberty St., New York, N. Y.
Hersey Mfg. Co., 381 E St., South Boston, Mass.
Heusser Instrument Mfg. Co., 165 Pierpont Ave., Salt Lake City, Utah.
Hickok Electrical Instrument Co., 15014 Du Pont Ave., Cleveland, Ohio.
Hiergesell & Sons, Wm., 295 Pearl St., New York, N. Y.
Hoffman Co., S. O., 835 Howard St., San Francisco, Calif.
Hoffman Specialty Co., 500 Fifth Ave., New York, N. Y.
Hoke, Inc., 122 Fifth Ave., New York, N. Y.
Holtzer-Cabot Elec. Co., 125 Amory St., Boston, Mass.
Holzapfel Instrument Co., 1201 Santa Fe Ave., Los Angeles, Calif.
Hood Liquid Gauge Co., 2306 W. Wabania Ave., Chicago, Ill.
Howard Clock Co., E., 206 Eustis St., Roxbury, Boston, Mass.
Howe & French, 99 Broad St., Boston, Mass.
Howe Scale Co., 111 Eighth Ave., New York, N. Y.
Hoyt Electrical Instrument Works, 857 Boylston St., Boston, Mass.
Huddleson, J. S. F., 104 Hanover St., Boston, Mass.
Humboldt Mfg. Co., 2014 Nebraska Ave., Chicago, Ill.
Hydraulic Press Co., Mount Gilead, Ohio.
Hy-Ef Products, Ltd., 1515 West Pico Blvd., Los Angeles, Calif.

I

Illinois Testing Laboratories, Inc., 141 West Austin St., Chicago, Ill.
Impact Register Co., 315 So. Neil St., Champaign, Ill.
Imperial Instruments, Inc., 64 Ira Ave., Akron, Ohio.
Indicating Calipers Corp., 506 East 19th Street, New York, N. Y.
Industrial Electronics Corp., 942 Prospect Ave., Cleveland, Ohio.
Industrial Pyrometer Co., 343 Mentor Ave., Painesville, Ohio.
Instrument Service Co., Inc., 310 Twelfth St., Hoboken, N. J.
International Broadcasting Equipment Co., 4508 Ravenswood Ave., Chicago, Ill.
International Business Machines Co., 270 Broadway, New York, N. Y.
International Equipment Co., 352 Western Ave., Brighton, Boston, Mass.
International Filter Co., 59 E. Van Buren St., Chicago, Ill.
Isometer Division, Elgin Softener Corp., Elgin, Illinois.

J

Jacobs Bros. Co., Inc., 26 Washington St., Brooklyn, N. Y.
Jaeger Watch Co., 304 East 45th Street, New York, N. Y.
Jefferson Electric Co., 25 & Madison Sts., Bellwood, Illinois.
Jensen Instrument Co., 624 E. 4th St., Los Angeles, Calif.
Johnson Regulator Co., Emil T., 6435 N. Talman Ave., Chicago, Ill.
Johnson Service Co., 1355 Washington Blvd., Chicago, Ill.
Johnston & Jennings Co., Ocero Div., 877 Addison Road, Cleveland, Ohio.
Jones & Lamson Machine Co., Springfield, Vt.
Jones-Mottola Sales Co., 370 Gerard Ave., New York, N. Y.

K

Kauffman-Lattimer Co., 263 N. Front St., Columbus, Ohio.
Kelley-Koett Mfg. Co., Covington, Ky.
Kellogg Switchboard & Supply Co., 1066 W. Adams St., Chicago, Ill.
Kendall, W. Floyd, 329 Livingston Ave., Lyndhurst, N. J.
Kern Co., 136 Liberty St., New York, N. Y.
Kessling Thermometer Co., E., 682-684 Jamaica Ave., Brooklyn, N. Y.
Keuffel & Esser Co., 300 Adams St., Hoboken, N. J.
Kewaunee Mfg. Co., 106 Lincoln St., Kewaunee, Wisc.
Kimble Glass Co., Vineland, N. J.
King-Seeley Corp., 302 Second St., Ann Arbor, Mich.
Klingerit, Inc., 16 Hudson St., New York, N. Y.
Klipfel Mfg. Co., 2651 W. Harrison St., Chicago, Ill.
Knowles Scale Wks., 78 Fletcher St., Lowell, Mass.
Koch & Co., Paul W., 20 North Wacker Drive, Chicago, Ill.
Kolesch & Company, 138 Fulton St., New York, N. Y.
Kollmorgen Optical Co., 767 Wythe Ave., Brooklyn, N. Y.
Kollsman Instrument Co., Inc., East N. Y. Terminal Bldgs., 1 Junius St., Brooklyn, N. Y.
Kron Company, Bridgeport, Conn.
Kurman Electric Co., 241 Lafayette St., New York, N. Y.

L

L. A. B. Corp., P. O. Box 162, Summit, N. J.
Laboratory Materials Co., 637 East 71st St., Chicago, Ill.
Lambert Meter Co., Inc., Bush Terminal, Building No. 4, Brooklyn, N. Y.
LaMotte Chemical Products Co., McCormick Bldg., Baltimore, Md.
Lampkin Laboratories, Bradenton, Fla.
Landis & Gyr, Inc., 104 Fifth Avenue, New York, N. Y.
Lawler Automatic Controls, Inc., 453 North MacQuesten Parkway, Mt. Vernon, N. Y.
Leach Relay Co., 5915 Avalon Blvd., Los Angeles, Calif.
Leatherman Co., C. M., 58 West Pearl St., Coldwater, Mich.
Leeds & Northrup Co., 4900 Stenton Ave., Philadelphia, Pa.
Leitz, Inc., E., 60 E. 10th St., New York, N. Y.
Leland Electric Co., Controls Div., Dayton, Ohio.
Peterson & Co., Inc., Leonard, 1222 Fullerton St., Chicago, Ill.
Lepel High Frequency Labs., Inc., 39 W. 60th St., New York, N. Y.
Leupold & Voelpel & Co., 425 N. E. 70th Ave., Portland, Ore.
Levitt Ferguson Co., 1828 Greenmount Ave., Baltimore, Md.
Lewis Air Conditioners, Inc., 1600 N. E. Broadway, Minneapolis, Minn.
Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.

Lightning Calculator Co., 8 Henry St., Bogota, N. J.
Limitorque Corp., 103 Park Ave., New York, N. Y.
Lincoln Meter Co., Inc., Springfield, Ill.
Lindberg Engineering Co., 218 Union Park Court, Chicago, Ill.
Liquidometer Co., Inc., 36-16 Skillman Ave., Long Island City, N. Y.
Littelfuse Laboratories, 4507 Ravenswood Ave., Ravenswood Sta., Chicago, Ill.
Livingston & Southard, Inc., Whitehall Bldg., 17 Battery Pl., New York, N. Y.
Lonergan Co., J. E., 213 Race St., Philadelphia, Pa.
Lowe, H. A., 1876 East 66th Street, Cleveland, Ohio.
Luertzing Glass Instrument Co., 607-609 S. Sixth St., P. O. Box 349, Vineland, N. J.
Lufkin Rule Co., Saginaw, Mich.
Lumenite Electric Co., Old Colony Bldg., Chicago, Ill.
Lundquist Tool & Mfg. Co., 144 Green St., Worcester, Mass.
Lux Clock Mfg. Co., Inc., 95 Johnson St., Waterbury, Conn.

M

Macalaster Bicknell Co., 171 Washington St., Cambridge, Mass.
Macbeth Daylighting Co., Inc., 227 West 17th St., New York, N. Y.
Machlett & Son, E., 220 E. 23rd St., New York, N. Y.
Magnaflux Corp., 323 Fourth Avenue, Pittsburgh, Pa.
Magnetic Analysis Corp., 42-40 Twelfth St., Long Island City, N. Y.
Magnetic Gauge Co., 60 E. Bartges St., Akron, Ohio.
Mann Instrument Co., 10 Arrow St., Cambridge, Mass.
Manufacturer's & Inventor's Elec. Co., 228 W. Broadway, New York, N. Y.
Marburg Bros., Inc., 90 West Street, New York, N. Y.
Marchant Calculating Machine Co., Emeryville, Calif.
Marietta Apparatus Co., Marietta, Ohio.
Marion Electrical Mfg. Co., 24 Cliff St., Jersey City, N. J.
Marsh & Co., Jas. P., 2063 Southport Ave., Chicago, Ill.
Mason-Neilan Co., 1190 Adams St., Boston, Mass.
Matthews Corp., W. N., 3713 Forest Park, St. Louis, Mo.
McAlear Mfg. Co., 1901 S. Western Ave., Chicago, Ill.
McDonnell & Miller, Wrigley Bldg., Chicago, Ill.
McDonnell Odometer Co., 3501 S. Kenzie St., Chicago, Ill.
McKesson-Doster-Northington Co., 1706 1st Ave., Birmingham, Ala.
McNeill Eng. Equip. Co., T. W., 4057 West Van Buren St., Chicago, Ill.
Meldrum-Gabrielson Corp., 601 W. Fayette St., Syracuse, N. Y.
Mercoid Corp., 4201 Belmont St., Chicago, Ill.
Mercon Regulator Co., 2357 N. 29th St., Milwaukee, Wis.
Meriam Co., 1955 West 112th St., Cleveland, Ohio.
Merrick Scale Mfg. Co., Autumn St., Passaic, N. J.
Merrit Engg. & Sales Co., Inc., 120 So. Niagara St., Lockport, N. Y.
Meter Devices Co., 1001 Prospect Ave., S. W., Canton, Ohio.
Metzger & Son, F. F., 2600 North 6th St., Philadelphia, Pa.
Meylan, A. R. & J. E., 264 West 40th St., New York, N. Y.
Miles Reproducer Co., Inc., 112 W. 14th St., New York, N. Y.
Millers Falls Co., Greenfield, Mass.
Milligan & Wright Co., 4614 Prospect Ave., Cleveland, Ohio.
Milwaukee Glass Works, Inc., 2336 N. 30th St., Milwaukee, Wisc.
Mine Safety Appliances Co., Braddock Ave. & Thomas Blvd., Pittsburgh, Pa.
Mine & Smelter Supply Co., Denver, Colo.
Minerallac Electric Co., 25 N. Peoria St., Chicago, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.
Moeller Instrument Co., 261-5 Sumpter St., Brooklyn, N. Y.
Mogey & Sons, Inc., William, Interhaven Ave., Plainfield, N. J.
Monroe Calculating Machine Co., 555 Mitchell St., Orange, N. J.
Morehouse Machine Co., York, Pa.
Morey & Jones, Ltd., 922 So. Hemlock St., Los Angeles, Calif.
Morse Magneto Clock Co., 17 East 42nd St., New York, N. Y.
M-R-H Labs., 208 McOmber St., Dowagiac, Mich.
Mulcare Engineering Co., 53 Park Place, New York, N. Y.
Munsell Color Co., 10 E. Franklin St., Baltimore, Md.

N

Nathan Mfg. Co., 250 Park Ave., New York, N. Y.
National Co., Inc., 61 Sherman St., Malden, Mass.
National Airoil Burner Co., 1327 Girard Ave., Philadelphia, Pa.
National Aluminate Corp., 6218 W. 66th Place, Chicago, Ill.
National Gauge Corp., 300 Pacific St., Brooklyn, N. Y.
National Meter Co., 4207 First Ave., Brooklyn, N. Y.
National Regulator Co., 2301 Knox Ave., Chicago, Ill.
National Scientific Corp., 814 N. Franklin St., Chicago, Ill.
Negus, T. S. & J. D., 69 Pearl St., New York, N. Y.
Nelson Section Liner Co., 727 N. Seventh St., DeKalb, Ill.
Neptune Meter Co., 50 W. 50th St., New York, N. Y.
Newark Scale Works, Inc., 10-12 Hobson St., Newark, N. J.
N. J. Laboratory Supply Co., 235 Plane St., Newark, N. J.
New Jersey Meter Co., Plainfield, N. J.
New York Biological Supply Co., 111 East 22nd St., New York, N. Y.
N. Y. Laboratory Supply Co., Inc., 530 Broadway, New York, N. Y.
Niehoff & Co., C. E., 230 W. Superior St., Chicago, Ill.
Northern Equipment Co., 1945 Grove Drive, Erie, Pa.
Norton Electrical Instrument Co., 101 Hilliard St., Manchester, Conn.
Nurnberg Thermometer Co., Inc., 397 Bridge St., Brooklyn, N. Y.

O

Ohmer Fare Register Co., Dayton, Ohio.
Ohmite Manufacturing Co., 636 N. Albany Ave., Chicago, Ill.
Olsen Testing Mach. Co., Tinius, 500 N. Twelfth St., Philadelphia, Pa.

P

Pacific Biological Laboratories, Pacific Grove, Calif.
Pacific Scientific Co., 15 Spear St., San Francisco, Calif.
Palmer Company, 26 Clay St., St. Bernard, Cincinnati, Ohio.
Palo-Myers, Inc., 81 Reade St., New York, N. Y.
Paragon Electric Co., Old Colony Bldg., Chicago, Ill.
Parche Time Stamp Co., 25 Beaver St., New York, N. Y.
Parks, Jr., Harry S., 3334 Market St., Philadelphia, Pa.
Parks-Cramer Co., Fitchburg, Mass.
Parr Instrument Co., 222-52 St., Moline, Ill.
Partlow Corp., 2 Campion Rd., New Hartford, N. Y.
Pastor Stop Watch Co., 43 East Main St., Waterbury, Conn.
Patterson Screen Co., Towanda, Pa.
Paulstick & Sons, H., 2124 Fulton St., Brooklyn, N. Y.
Pease Co., C. F., 882 N. Franklin St., Chicago, Ill.
Pecorella Mfg. Co., 64 Stanhope St., Brooklyn, N. Y.
Penn Electric Switch Co., 20th & E. Walnut, Des Moines, Iowa.
Perkins & Son, Inc., B. F., Holyoke, Mass.
Permutit Company, 330 West 42nd St., New York, N. Y.
Petrometer Corp., Daily Star Bldg., Long Island City, N. Y.
Pfaltz & Bauer, Inc., 300 Pearl Street, New York, N. Y.
Philadelphia Thermometer Co., 915 Filbert St., Philadelphia, Pa.
Pioneer Instrument Company, 754 Lexington Avenue, Brooklyn, N. Y.
Pitometer Log Corp., 206 Lafayette St., New York, N. Y.
Pittsburgh Equitable Meter Co., 400 Lexington Ave., Pittsburgh, Pa.
Pittsburgh Instrument & Mach. Co., 1026 Reedsdale St., N. S., Pittsburgh, Pa.
Pittsburgh Taximeter Co., Point Bldg., Pittsburgh, Pa.
Plouff Company, 1150 Columbus Ave., Boston, Mass.
Pneumercator Co., Inc., 305 E. 46th St., New York, N. Y.
Podbielniak Industrial Research & Engineering Laboratories, 222 E. Superior St., 5th Fl., Chicago, Ill.
Polarized Products Co., P. O. Box 27, White Stone, Long Island, N. Y.
Post Co., Frederick, 316 S. Wabash Ave., Chicago, Ill.
Powers Regulator Co., 2736 Greenview Ave., Chicago, Ill.
Practical Instrument Co., 205 W. Wacker Dr., Rm. 2016, Chicago, Ill.
Pratt & Whitney Co., Division-Miles-Bement-Pond Co., Hartford, Conn.
Precise Instrument Co., 200 Tillary St., Brooklyn, N. Y.
Precision Balancing Machine Co., 3042 Snelling Ave., Minneapolis, Minn.
Precision Gage & Tool Co., 320 East 3 St., Dayton, Ohio.
Precision Scientific Co., 1736-1754 N. Springfield Ave., Chicago, Ill.
Precision Thermometer & Instr. Co., 1434 Brandywine St., Philadelphia, Pa.
Premier Crystal Labs., Inc., 53 Park Row, New York, N. Y.
Production Instrument Co., 1315 South Wabash Ave., Chicago, Ill.
Pyrometer Instrument Co., 103 Lafayette St., New York, N. Y.

R

Racine Co., Jules, 20 West 47th St., New York, N. Y.
Rascher & Betzold, 829-835 Orleans St., Chicago, Ill.
Rawson Electrical Instrument Co., [illegible] Cambridge, Mass.
Ray Pressure Snubber Co., 315 E. [illegible] St., Charlotte, N. C.
Raytheon Mfg. Co., Electrical [illegible] Div., [illegible] Willow St., Waltham, Mass.
R. C. A. Victor Co., Camden, N. J.
Redington Co., F. B., 112 S. [illegible] Chicago, Ill.
Reed Small Tool Works, 35 Hermon St., Worcester, Mass.
Refinery Supply Co., 621 East 4th St., Tulsa, Okla.
Refrigerating Specialties Co., 728 [illegible] Blvd., Chicago, Ill.
Reliance Gauge Column Co., 5902 Carnegie Ave., Cleveland, Ohio.
Reliance Instrument Co., 1135 West Van Buren St., Chicago, Ill.
Remler Co., Ltd., 2101 Bryant St., San Francisco, Calif.
Republic Flow Meters Co., 2240 Diversey Parkway, Chicago, Ill.
Reynolds Gas Regulator Co., Anderson, Ind.
Rhamstine, J. Thos., 500 East Woodbridge St., Detroit, Mich.
Richardson Scale Co., Clifton, N. J.
Riehle Testing Machine Div., American Machine & Metals, Inc., 100 Sixth Ave., New York, N. Y.
Rieker Instrument Co., 1919 Fairmount Ave., Philadelphia, Pa.
Riverbank Laboratories, Geneva, Ill.
Robertshaw Thermostat Co., Youngwood, Pa.
Robertson, 3rd, J. L., 116 Broad St., New York, N. Y.
Rochester Mfg. Co., Rochester, N. Y.
Rockwell Co., Stanley P., 296 Homestead Ave., Hartford, Conn.
Roller-Smith Co., 233 Broadway, New York, N. Y.
Ross Operating Valve Co., 6488 Epworth Blvd., Detroit, Mich.
R-S Products Corp., 4530 Germantown Ave., Philadelphia, Pa.
Rubicon Company, 29 N. Sixth St., Philadelphia, Pa.
Ruehfel & Co., George, 70-10 Central Ave., Glendale, L. I., N. Y.
Ruska & Co., Inc., Walter, 6512 Westchester St., Houston, Texas.

S

Sangamo Electric Co., 1022 Converse Ave., Springfield, Ill.
Sarco Company, Inc., 183 Madison Ave., New York, N. Y.
Sargent & Co., E. H., 155 Superior St., Chicago, Ill.
Sav-U-Time Devices, Inc., 88 Manhattan St., Rochester, N. Y.
Schaar & Company, 754 W. Mather St., Chicago, Ill.
Schaffer Poidometer Co., 2828 Smallman St., Pittsburgh, Pa.
Scherr Co., Inc., George, 128 Lafayette St., New York, N. Y.
Schlegelmilch Bros., 3806 31st St., Long Island City, N. Y.
Schuette & Koerting, 12th & Thompson Sts., Philadelphia, Pa.
Schultheis Corp., E. W., 466 Wyckoff Ave., Brooklyn, N. Y.
Schweitzer & Conrad, Inc., 4435 Ravenswood Ave., Chicago, Ill.
Scientific Glass Apparatus Co., 49 West Ackerman St., Bloomfield, N. J.
Scientific Instrument Co., 535 West Larned St., Detroit, Mich.
Scientific Instrument Co., 1441 Walnut St., Berkeley, Calif.
Scott Co., Henry L., Blackstone & Culver Sts., Providence, R. I.
Seederer-Kohlbusch, Inc., 149 New York Ave., Jersey City, N. J.
Sensitive Research Instrument Co., 4515 Bronx Blvd., New York, N. Y.
Service Recorder Co., Hanna Bldg., Cleveland, Ohio.
Seth Thomas Clock Co., Thomaston, Conn.
Shallcross Control Systems Co., 3707 N. Richards St., Milwaukee, Wis.
Shallcross Mfg. Co., Collingdale, Pa.
Shand & Jurs Co., Carlton & Eighth Sts., Berkeley, Calif.
Sheer Co., H. M., 2nd & Hampshire, Quincy, Ill.
Sheffield Gage Corp., 1517 East 3 St., Dayton, Ohio.
Sheldon Electric Corp., 100 Fifth Ave., New York, N. Y.
Sherman, L. A., Hanover, Massachusetts.
Shore Instrument & Mfg. Co., Van Wyck & Carll Sts., Jamaica, N. Y.
Sight Light Corp., Suite 1529, 342 Madison Ave., New York, N. Y.
Signal Engineering Mfg. Co., 154 West 14th St., New York, N. Y.
Simplex Time Recorder Co., Sanborn Street, Gardner, Mass.
Simplex Valve & Meter Co., 6755 [illegible] Street, Philadelphia, Pa.
Slocomb Co., J. T., 35 Oxford St., Providence, R. I.
Smith Mfg. Co., A. P., 545 No. Arlington Ave., East Orange, N. J.

Smith Welding Equipment Corp., 2619 4th Street, S. E., Minneapolis, Minn.
Soltmann, Inc., E. G., 250 East 43rd Street, New York, N. Y.
Sound Engineering Corp., 416 Leavitt St., Chicago, Ill.
Specialty Glass Co., 536 Lake Shore Drive, Chicago, Ill.
Speedway Mfg. Co., 1834 So. 52nd Avenue, Cicero, Ill.
Spencer Lens Co., 19 Doat St., Buffalo, N. Y.
Spencer Regulator Co., Box 83, Beverly, Mass.
Spencer Thermostat Co., 34 Forest St., Attleboro, Mass.
Sperry Gyroscope Co., Inc., Manhattan Bridge Plaza, Brooklyn, N. Y.
Sperry Products, Inc., Manhattan Bridge Plaza, Brooklyn, N. Y.
Sperry-Sun Well Surveying Co., 1608 Walnut St., Philadelphia, Pa.
Spindler & Sauppe, 86 Third St., San Francisco, Calif.
Sprague Meter Co., Bridgeport, Conn.
Standard Computing Scale Co., Inc., Detroit, Mich.
Standard Concrete Apparatus Co., 1422 R. I. Ave., N. W., Washington, D. C.
Standard Electric Time Co., Springfield, Mass.
Standard Glass Apparatus Works, 2 Elm Place, Freeport, L. I., N. Y.
Standard Pyrometric Cone Co., 1538 North High St., Columbus, Ohio.
Standard Scientific Supply Corp., 34-38 W. 4th St., New York, N. Y.
Standard Thermometer, Inc., 65 Shirley St., Boston, Mass.
Star Brass Mfg. Co., 104 E. Dedham St., Boston, Mass.
Star Compass Co., 110 Antwerp St., East Milton, Mass.
Starrett Co., L. S., Athol, Mass.
States Co., Hartford, Conn.
Steel City Testing Laboratory, 8843 Livernois Ave., Detroit Mich.
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Sterling Engine Co., 1253 Niagara St., Buffalo, N. Y.
Stewart-Warner Corp., 1826 Diversey Parkway, Chicago, Ill.
Sticht & Co., Herman H., 27 Park Place, Corner of Church St., New York, N. Y.
Stockton Profile Gauge Corp., 165 Jackson St., Lowell, Mass.
Stoelting Co., C. H., 424 N. Homan Ave., Chicago, Ill.
Stokes Machine Co., F. J., 5820 Tabor Rd., Philadelphia, Pa.
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Stroboscope Corp., 25 West 43rd Street, New York, N. Y.
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Stromberg Motoscope Corp., 2130 Lawrence Ave., Chicago, Ill.
Struthers-Dunn, Inc., 139 Juniper St., Philadelphia, Pa.
Submarine Signal Co., 160 State St., Boston, Mass.
Summit Industrial Instrument Co., 96 East Miller St., Akron, Ohio.
Superior Meter Co., 167-41st St., Brooklyn, N. Y.
Supreme Instruments Corp., Greenwood, Miss.
Suter, Alfred, 200 Fifth Avenue, New York, N. Y.
Swam & Co., 111 York St., Hanover, Pa.

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Tagliabue Mfg. Co., C. J., Park & Nostrand Aves., Brooklyn, N. Y.
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Tavella Sales Company, 25 West Broadway, New York, N. Y.
Taylor & Co., Inc., W. A., 872 Linden Ave., Baltimore, Md.
Taylor Instrument Cos., 95 Ames St., Rochester, N. Y.
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Thomas Co., Arthur H., 230-2-4 South Seventh St., Philadelphia, Pa.
Thompson Grinder Co., 1534 W. Main St., Springfield, Ohio.
Thwing Instrument Co., 3323 Lancaster Ave., Philadelphia, Pa.
Thyle Machinery Co., 514 Bryant St., San Francisco, Calif.
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Torsion Balance Co., 92 Reade St., New York, N. Y.
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Trill Indicator Co., 38 E. South St., Corry, Pa.
Triner Sales Co., 1310 Merchandise Mart, Chicago, Ill.
Triplett Electrical Instrument Co., 135 E. College Ave., Bluffton, Ohio.
Troemmer, Henry, 911 Arch St., Philadelphia, Pa.

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Uehling Instrument Co., 475 Getty Ave., Paterson, N. J.
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Union Tool Company, Orange, Mass.
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United Electrical Controls, 69 A Street, Boston, Mass.
United Sound Engineering Co., 2233 University Ave., St. Paul, Minn.
U. S. Fare Recording Co., 503 W. 54th St., New York, N. Y.
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Vulcan Cooper & Supply Co., 120-126 Sycamore St., Cincinnati, Ohio.

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Wade Instrument Co., 2274-C Brooklyn Station, Cleveland, Ohio.
Wagner & Son, Carl H., 1944 N. Albany Ave., Chicago, Ill.
Walker & Co., Inc., Geo. T., 324 Fifth Ave., South, Minneapolis, Minn.
Wallace & Tiernan Products, Inc., Belleville, N. J.
Walser Automatic Timer Co., 420 Lexington Ave., New York, N. Y.
Waltham Dial Gage Co., 85 Myrtle St., Waltham, Mass.
Waltham Watch Co., Waltham, Mass.
Ward Leonard Elec. Co., 37 South St., Mount Vernon, N. Y.
Wards Natural Science Estab., Inc., P. O. Box 24, Beechwood Sta., Rochester, N. Y.
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Watts Regulator Co., 242 Lowell St., Lawrence, Mass.
Weiss & Son, Albert A., 263 Vanderbilt Ave., Brooklyn, N. Y.
Weksler Thermometer Corp., 438 W. 125th St., New York, N. Y.
Welch Mfg. Co., W. M., 1516 Orleans St., Chicago, Ill.
Wells Manufacturing Co., P. O. Box 613, Greenfield, Mass.
West & Dodge Thread Gauge Co., Inc., 174 Camden St., Boston, Mass.
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Weston Electrical Instrument Corp., 614 Frelinghuysen Ave., Newark, N. J.
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White Dental Mfg. Co., S. S., 152 W. 42nd St., New York, N. Y.
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Williams, Brown & Earle, Inc., 918 Chestnut St., Philadelphia, Pa.
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Yarnall-Waring Co., 102 E. Mermaid Lane, Philadelphia, Pa.

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Zeiss, Inc., Carl, 485 Fifth Ave., New York, N. Y.
Zeleny Thermometer Co., 542 S. Dearborn St., Chicago, Ill.
Zenith Electric Co., 607 So. Dearborn St., Chicago, Ill.
Zernikow Co., O., 15 Park Row, New York, N. Y.
Zuhr, Inc., Henry, 187 Lafayette St., New York, N. Y.

TRADE NAMES

(Continued from Page 25)

TUFTS Gas Meters—American Meter Co.
TURTOX Biological Instruments—General Biological Supply House
TWO-WAY Rules—Lufkin Rule Co.
UBBELOHDE Viscosimeter—Fish-Schurman Corp.
U.C.C. Combustible Gas Indicator—E. D. Bullard Co.
ULTRA OPTIMETER Gage—George Scherr Co.
UNIMETER Volt-Ohm-Milliameter—Clough-Brengle Co.
UNI-SNAP Test Switch—Electrical Facilities, Inc.
UNITEMP Constant Temperature Baths — Precision Scientific Co.
UNITIZED Gas Analyzers—Fisher Scientific Co.
UNIVERSAL Hand Tachometers—Herman H. Sticht & Co.
UNIVERSAL Liquid Level Indicators—Rochester Mfg. Co., Inc.
UNIVERSAL Measuring Tapes—Lufkin Rule Co.
UNIVERSAL Sand Tester—Kolesch & Co.
UNIVERSAL Sun Dial—Eastern Science Supply Co.
UPTON-LEWIS Testing Machines—Tinius Olsen Testing Machine Co.
U. S. E. Communication Instruments—United Sound Engineering Co.
USTCOGRAPH Time & Mileage Recorder—U. S. Recording Co.
UTILITY Time Switch—Walser Automatic Timer Co.
UVIOL Glass—Fish-Schurman Corp.
VACAMETERS Automotive Testing Vacuum Gages—Stromberg Motoscope Corp.
VAN SLYKE Apparatus for Determining Gases in Liquids—Eimer & Amend
VAPOCARB Furnace Atmosphere Control—Leeds & Northrup Co.
VAPOMETER Vapor Transmission Tester—Thwing Instrument Co.
VAREC Level Gages—Vapor Recovery Systems Co.
VARIAC Variable Autotransformer—General Radio Co.
VERIGRAPH Weight Control & Moisture Control—Automatic Precision Instrument Co.
VIBRACORDER Vehicle Recorder—Ohmer Fare Register Co.
VIBROSCOPE—Electrocon Corp.
VICTOR Engine Indicator Reducing Motion—Jas. L. Robertson, 3rd
VISITRON Photoelectric Cells—G-M Laboratories, Inc.
VITROHM Resistances—Ward Leonard Electric Co.
WACO Laboratory Apparatus—Wilkens-Anderson Co.
WATCH DOG Water Meter — Worthington Pump & Mach. Corp.
WATSCO Venturi Tubes—Water Works Supply Co.
WEATHERHEAD Crusher—Humboldt Mfg. Co.
WEATHERMAN Weather Instruments—Julian P. Friez & Sons, Inc.
WEATHER-MATIC Valves—Lawler Automatic Controls, Inc.
WEATHER-OMETER Weathering Action Tester—Atlas Electric Devices Co.
W.E.C.O.—Willcox Engineering Co.
WEIGHMAN Scale Beam—Merrick Scale Mfg. Co.
WEIGHTOMETER Conveyor Scales—Merrick Scale Mfg. Co.
WELL-DONE Screw Thread Gage—Wells Mfg. Co.
WELIS-KROGH Osmometer—Eimer & Amend
WENNER Seismometer—R. Y. Ferner Co.
WESACO Laboratory Apparatus—Western Scientific Co.
WESCO Thermometers & Hydrometers—E. W. Schultheis Corp.
WESTCOTT Gas Meters—American Meter Co.
WESTERN Measuring Tapes—Lufkin Rule Co.
WESTINGHOUSE Wet Station Meters — Pittsburgh Equitable Meter Co.
WHEELCO Temperature Controls—Thermo Control Devices, Inc.
WHITE-SOUTHER Testing Machines — Tinius Olsen Testing Machine Co.
WHITTEMORE Strain Gage—Baldwin-Southwark Corp.
WILLIS IMPROVED Planimeter—Jas. L. Robertson, 3rd
WIZARD JUNIOR Tape Rules—Lufkin Rule Co.
WIZARD Pilot Operated Pressure Regulator—Fisher Governor Co.
WIZARD Tape Rules—Lufkin Rule Co.
WOLVERINE Measuring Tapes—Lufkin Rule Co.
WORLD'S BEST Computing Scales—Standard Computing Scale Co.
XACTOMETER Liquid Meters—S. F. Bowser & Co., Inc.
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law. In the latter curve it will be seen that the rate of travel varies with the distance yet to be traversed, so that—theoretically—the pointer never reaches the ultimate indication of a steady load. The time interval of such an instrument, therefore, is arbitrarily defined as the time required for the demand pointer to attain an indication of **90%** of the value of a suddenly applied steady load.

Logarithmic lagged demand meters follow their law whether the load be increasing or decreasing and whether the change of load be large or small. If we carry the analysis to the extent of plotting a graph for a series of brief load applications separated by brief intervals, we find that the logarithmic meter takes cognizance of the previous history of the load, by giving a gradually increasing indication. The temperature rise of electrical apparatus tends to follow a logarithmic law, and on this fact the proponents of the logarithmic demand meter base the claim that such a meter, having a characteristic period corresponding to that of the apparatus in the circuit, furnishes a better index of the limitations of the equipment than do meters which follow a straight-line law.

Various methods are employed whereby lagged demand meters are made to obey the definite laws aimed at by their designers. Broadly speaking, there are four groups of lagged demand meters: Those of the first group employ thermal lag; in those of the second group the lagging is achieved entirely by mechanical movements; the third employ fluids flowing through small orifices; the fourth employ magnetic damping. These divisions are not sharp, because one demand meter may employ more than one principle. In this discussion, lagged demand meters will be classified as far as possible according to the lagging principle employed; and without regard to the electrical magnitude (amperes, watts or volt-amperes) upon which measurement is performed.

For further analyses of demand meter performance see:

P. M. Lincoln. Rates and Rate Making. *Transactions A.I.E.E.*, Vol. 34, 1915, pages 2279 to 2360.

P. M. Lincoln. Character of the Thermal Storage Meter. *Transactions A.I.E.E.*, Vol. 37, 1918, pages 189 to 219.

P. A. Borden. Measurement of Maximum Demand. *Transactions A.I.E.E.*, Vol. 39, 1920, pages 1845 to 1849.

(b) Thermally Lagged Demand Meters.

"Wright" Meters.

The oldest form of demand meter is probably the Wright demand indicator which appeared about 1896. In principle this is a differential gas thermometer having two bulbs of approximately the same size, connected by a U-tube filled with liquid and provided with a third tube, along which is fixed a graduated scale. A heating coil wound on one of the bulbs carries either the full current of the circuit, or a current proportional thereto. The heat produced causes the air to expand and depress the column of liquid in one side of the U-tube, causing it to rise in the other and overflow into the reading tube. A periodical inspection of the height of the liquid as measured against the scale provides a measure of the ampere demand in the circuit. Fig. 43-25 shows a diagram of such an instrument: C designates the heating coil; *L-L* the sides of the U-tube and *R* the reading tube. The time element is nominally introduced by the thermal inertia of the heated parts, and may be modified by constricting the bore of the tube. The tube system is carried upon trunnions in a cast iron case, so that at the time of observation it may be inverted, the reading tube drained, and the instrument thus made ready for the succeeding demand. Provision for high current ratings is made by the use of shunts. The Wright meter was produced in this country by the General Electric Co.; but in pres-

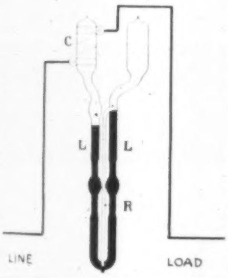

Fig. 43-25

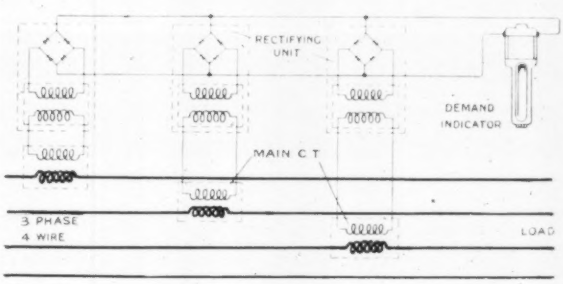

Fig. 43-26

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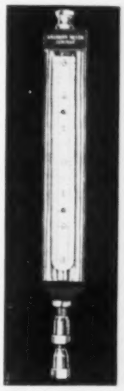

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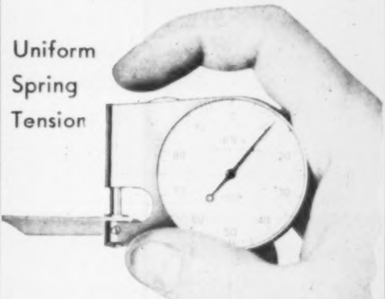

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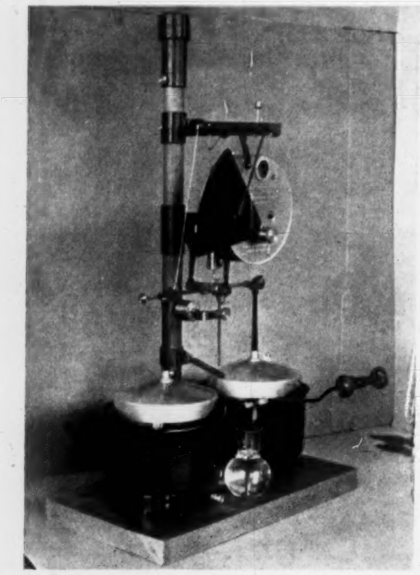

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The Wright meter is still widely used in England, and is built in this country by the Reason Mfg. Co. A recent development by this maker accomplishes ampere-demand measurement on a polyphase system by the use of a Wright meter in combination with a group of rectifiers, as shown in Fig. 43-26. Though it appears difficult to arrive at an exact conception of the magnitude measured by such an arrangement, it is claimed that it gives a valuable index of current demand upon the system, in addition to taking cognizance of conditions of unbalanced loading.

General Electric Ampere-Demand Meter.

The General Electric "Type H-2" demand meter, Fig. 43-27, operates on the thermal principle, the control force being derived from a bimetallic strip associated with a heating element which carries the current to be measured. The use of two differentially connected strips, one heated by the current, and the other responding only to ambient temperature, provides a compensation for local temperature conditions. The time element is governed by the proportioning of the heating element and the thermostatic strip, the spring requiring approximately 30 minutes to reach the maximum temperature corresponding to any constant value of current.

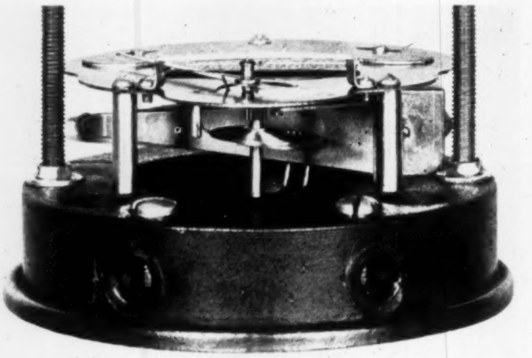

Fig. 43-27

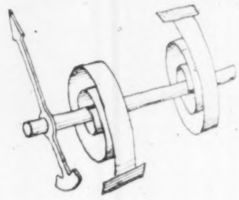

Fig. 43-28

Lincoln Ampere-Demand Meter.

In the Lincoln thermal ampere-demand meter two bimetallic springs are directly opposed on a common spindle, as shown in Fig. 43-28. When used on a two-wire circuit, a heating resistor, associated with one of these springs, carries the line current or a definite proportion of it. The opposed spring, identical in its physical characteristics, serves as a compensation for ambient temperatures. A complete assembly of the opposed springs and heaters appears in Fig. 43-29. When used on a three-wire circuit both springs are employed, the heating units being connected as shown in Fig. 43-30. Here *B* and *E* represent heating resistors of equal value connected in the outside wires of the circuit and associated with that spring which tends to force the pointer up the scale. Another resistor, of half the value of either *B* or *E*, and associated with

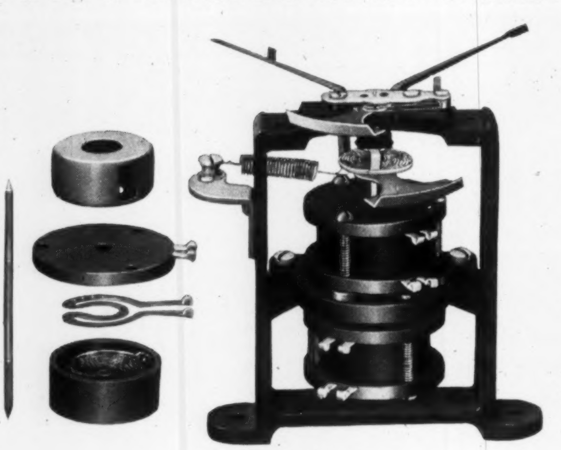

Fig. 43-29

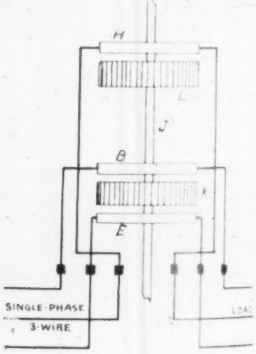

Fig. 43-30

the opposed spring, is represented by H. (In practice, H is usually made up of two units, duplicates of B and E, similarly placed, and connected in parallel.) An analysis of the relative heating produced on the differentially connected springs shows that the deflection of the pointer becomes a logical measure of the heating effect to be effected from the current in a three-wire single-phase load, whether balanced or unbalanced.[4]

Lincoln Watt-Demand Meter.

The Lincoln watt demand meter (built also by Westinghouse as "Type H") is structurally similar to the ampere demand meter, in having a pointer deflected by the differential action of two opposed bimetallic springs. Its interesting circuit, Fig. 43-31, demands special attention. Small transformer C, incorporated within the instrument, has its secondary winding tapped at the exact middle point, and is connected with its primary directly across the supply voltage. The secondary winding is connected to two equal resistances R_1 and R_2 in series with each other, so that there circulates in the resistances a current proportional to the line voltage. The load current is brought to the mid-tap of the transformer, where it divides into two equal portions through the two resistors and reunites at their common junction. By reference to the directions as indicated by the arrows, it will be seen that the two currents—one the secondary current due to the presence of the voltage, and the other due to the passage of the line current—are additive in one of the resistors and subtractive in the other.

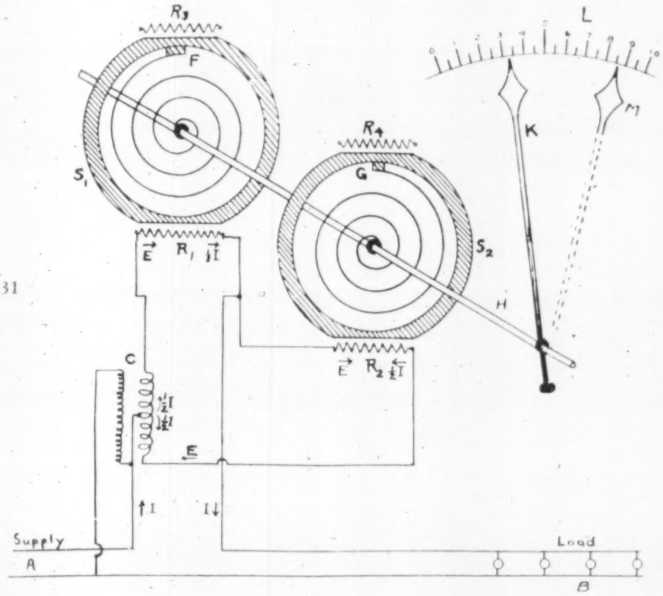

Fig. 43-31

If the current that passes through the resistors due to the presence of the line voltage be designated by E and that due to the line current by I, the resultant current in one of the resistors will be $E + \frac{1}{2}I$ and in the other $E - \frac{1}{2}I$. In the resistor R_1 the heat developed will be proportional to $(E + \frac{1}{2}I)^2$, and in the resistor R_2 it will be proportional to $(E - \frac{1}{2}I)^2$. The difference between these magnitudes is:

$$\begin{aligned}&(E + \tfrac{1}{2}I)^2 - (E - \tfrac{1}{2}I)^2\\ &= E^2 + EI + \tfrac{1}{4}I^2 - E^2 + EI - \tfrac{1}{4}I^2\\ &= 2EI\end{aligned}$$

which magnitude is proportional to the watts in the circuit.

It may be shown that this device constitutes a true thermal wattmeter, and that its indications are always proportional to the watts, quite independently of power factor and wave-form.

The bimetallic springs F and G, being opposed, deflect shaft H and with it pointer K only in response to a difference in temperature between the two. These springs are enclosed in metal cylinders S_1 and S_2, so that response to difference in heat generated in the two resistances is subject to lag, these cylinders being proportioned to give the desired time characteristic to the instrument. The connections as described deal only with a single phase load; but, by adding another pair of resistors (R_3 and R_4) and connecting them in a

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[4] U. S. Patent No. 1,634,546, S. L. B. Lines, July 5, 1927.

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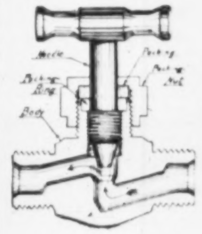

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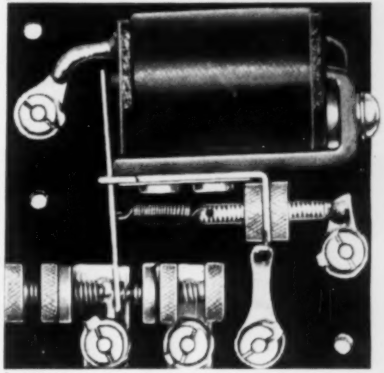

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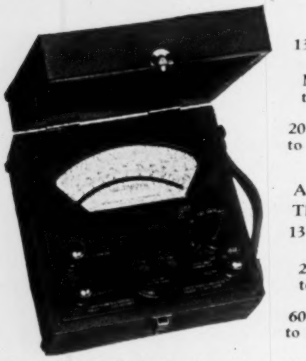

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similar thermal wattmeter circuit, full provision is made for measuring the demand of a polyphase circuit by the two-wattmeter method.

In a recently announced embodiment of the thermal demand meter the bimetallic springs have been replaced by Bourdon tubes sealed to metallic vessels containing liquid heated by the respective resistors. A diagram of the instrument is shown in Fig. 43-32.[5] By provision of vacuum-insulated containers to prevent radiation, together with a thermal shunt between the heating elements, it has been possible to produce a thermal wattmeter having an almost perfect straight-line relationship between watts and scale deflection.[5,6]

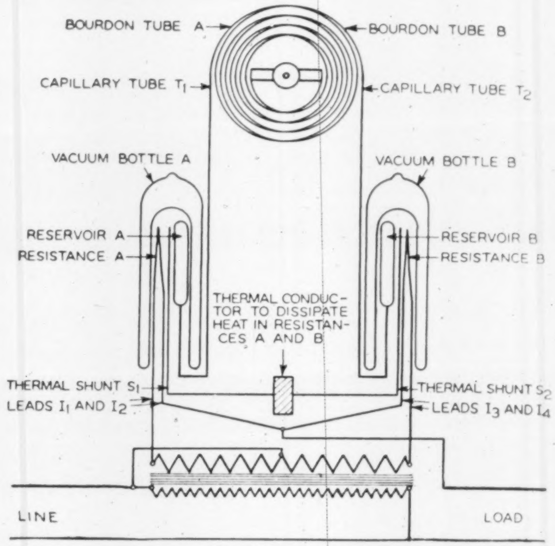

Fig. 43-32.

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[5] P. M. Lincoln. An Improved Electrothermic Instrument. *Electrical Engineering*, Vol. 54, May 1935, pages 474-481.

[6] U. S. Patent No. 1,992,535, P. M. Lincoln, Feb. 26, 1935.

INSTRUMENTS BOOK SHELF

Die Technik der Fernwirkanlagen. By W. Stäblein. R. Oldenbourg, Munich & Berlin, 1934. Cloth, 294 pages, 6½x9½ inches. Price 45RM.

This German book provides a detailed treatment of the subject of remote measurement and control in connection with power plants and railways according to current European practice. The fundamental principles embodied in various systems of telemetering are fully explained, and at least one example of each described more or less completely. Much space is given to "impulse" methods. Several schemes practically unknown in America are shown; and, on the other hand, it is notable that no reference is made to a number of systems which have found considerable use in this country. Electron tubes, for example, receive little attention; and the thermoelectric system is ignored.

Mechanical and electrical methods of accomplishing totalization are discussed. The subject of remote regulation, as distinguished from supervisory control, receives considerable attention; and a number of systems for regulating the performance of steam engines and other prime movers are considered and illustrated by diagrams.

Interconnecting circuits are classified, and the possibilities of metallic lines and the various types of phantom channels for telemetering, including the use of duplex systems, the superposition of different kinds of current in one circuit, and the alternate use of circuits through the use of synchronous switching apparatus exhaustively treated.

The telemetering systems and methods represented in this work are distinctly those of Continental Europe and, though there is appended to the text an exceptionally complete bibliography of about 530 references (18[illegible] of them being to articles published in the English language) there appears in the body of the book little or no reference to English or American developments. The work is well illustrated with 108 line drawings, diagrams and graphs, interspersed through the text; and a number of types of German apparatus for telemetering and supervisory control are exemplified in some thirty pages of halftones appearing at the close of the book.

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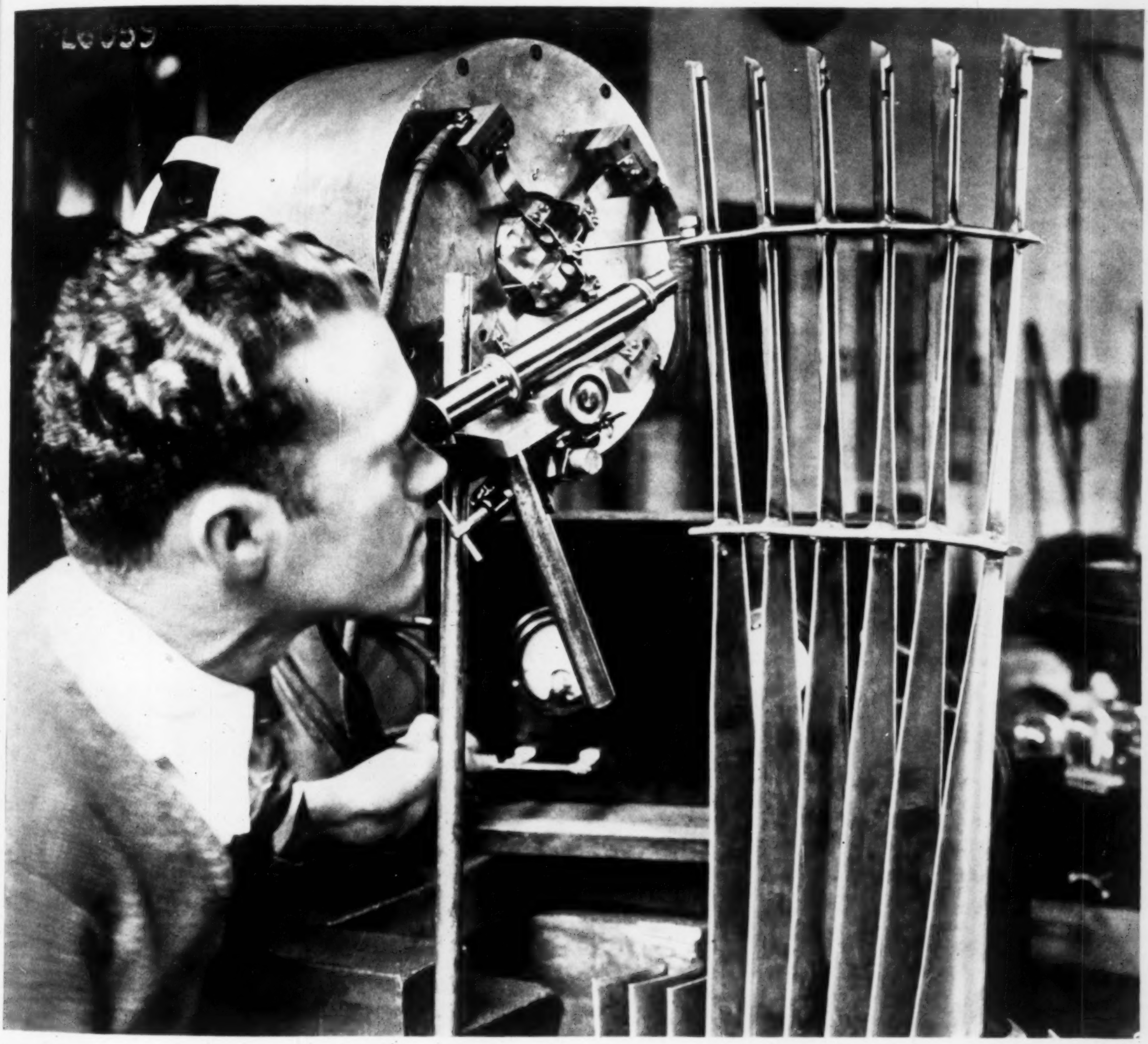
INSPECTION and TESTING



STUDYING VIBRATIONS OF TURBINE BLADES
[Fig. 1 of article by R. P. Kroon beginning on next page]

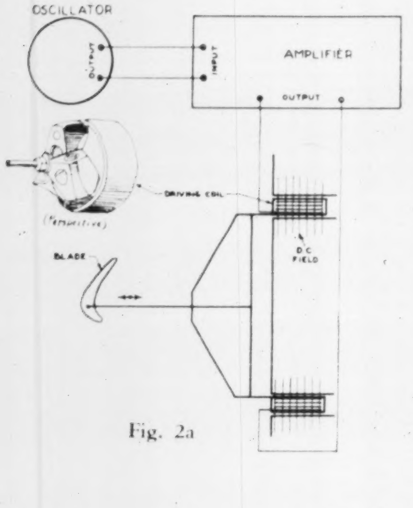


Fig. 2a

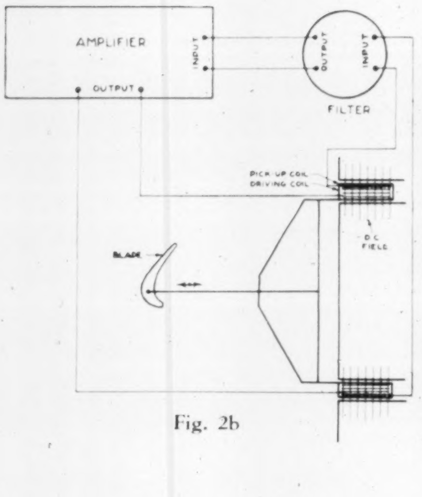


Fig. 2b

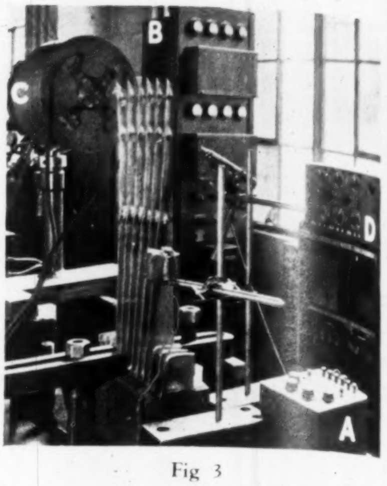


Fig 3

Mechanical Tests on Turbine Blades

By R. P. KROON*

TO avoid blade wrecks, which entail shutdowns and often costly repairs, most large turbine manufacturers have taken a keen interest in blade research. Both in this country and in Europe a vast amount of theoretical work has been carried out in this field.

More and more the value of tests on simple models or actual blades is appreciated, the purpose of these tests being two-fold: (1) To check the theories, which are usually based on a number of questionable assumptions. (2) To obtain information which cannot be derived from calculations (strength of materials, damping properties).

Since the great majority of blade failures is due to vibrations, it may be well to realize how these vibrations come about. It will then be obvious what kind of information we seek to derive from the tests.

When rotating, every spindle blade passes through regions of different pressures; also the steam velocity varies from one position to the next one. Each high spot gives a "kick" to the blade. The effect is that the blade is acted upon by a periodic force (period = 1 revolution). Like any periodic force it can be resolved into its component frequencies (Fourier series). The fundamantal frequency is the running speed (revolutions/second) and the higher harmonics are multiples of this frequency.

It is as if the blade would get impulses 1 ×, 2 ×, 3 ×, etc., every revolution. Whenever one of these impulses has the same frequency as a natural frequency of the blade (or blade segment) the blade will be in resonance; it will vibrate with maximum amplitude and might fail from fatigue.

Suppose a turbine runs at 1800 r.p.m. (30 r.p.s.). Then the rotating blades will receive impulses of the frequencies; 30 cycles/sec. (fundamental), 60/sec., 90/sec., etc. If the natural frequency of the blade at 1800 r.p.m. would be, say, 120 cycles/sec. (or close to this) the blade would go back and forth four times every revolution. (We could actually excite and record vibrations where the blades moved up to 66 times back and forth every revolution.)

Excluding the possibility of blade "fluttering" in a steam flow of constant velocity and pressure, we have thus recognized the vibration to be "forced."

To minimize failures, two things are important: (1) Wherever possible, to stay away from resonance (no natural frequencies near any multiple of the running speed). (2) To have as much internal and external friction as possible in the vibrating system.

With this background, it is at once clear what properties are of interest:

(a) *Natural frequencies* of single blades and blade segments; influence of centrifugal force, temperature, root fastening; effect of number of blades per segment.

(b) *Mechanical strength* as such; resilience to vibratory load; different materials; influence of silver soldering and welding lashing wires; comparative strength of diverse designs.

(c) *Damping*: internal damping of materials; friction of different constructions.

To study blade vibration experimentally one should be able to vibrate the blades at will. The Electric Blade Vibrator developed by J. G. Baker of the Westinghouse Research Laboratories has proved itself to be unsurpassable for this purpose. Its output is strong enough to vi

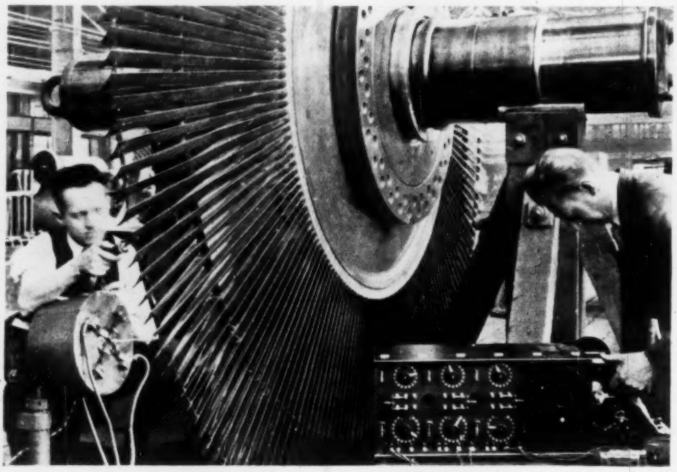


Fig. 4

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*Experimental Division, Westinghouse Electric & Manufacturing Co., South Philadelphia Works.

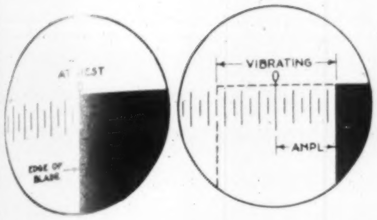

Fig. 5

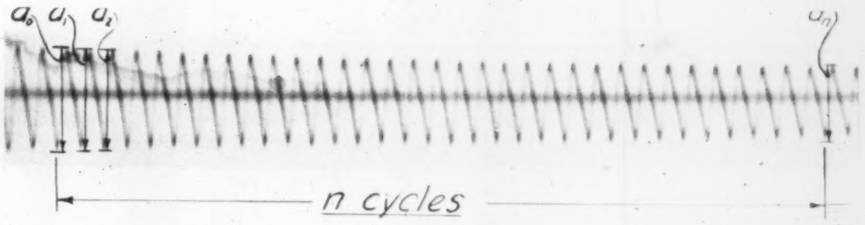

Fig. 6

brate and break a whole segment of 38″ long blades. Its frequency range is from 30 to 10,000 cycles sec.

The pulsating force is obtained by sending alternating current of the desired frequency through a coil which is movable in the field of a strong d-c. magnet. Fig. 1 [on the title-page of this Section—Ed.] shows the coil being held in the circular gap of the magnet by four curved springs, which also serve as conductors. The coil is connected to the blade by a slender rod, as may be seen also in Figs. 3 and 4. A small electric oscillator provides the variable frequency, but it is necessary to amplify its output considerably (Fig. 2a). Fig. 3 shows this oscillator at A, a 500-watt amplifier at B, and at C the magnet, with its coil in action on a segment of low pressure blades.

The inventor has added another feature: to make the blades excite their own vibration at their natural frequency. For this purpose a pick-up coil of fine wire is arranged on top of the driving coil. The vibration now produced is "self-excited": once the blade is vibrating, alternating voltage is induced in the pick-up coil; this (filtered) is applied at the input of the amplifier; the output is connected to the driving coil, which, in turn, vibrates the blade (Fig. 2b).

It is possible to obtain some of the lower *natural frequencies* by hitting the blades in the direction of vibration, but generally only those modes of vibration are sustained which require the least energy.

To find the natural frequencies with the vibrator, all one has to do is to tune in the oscillator until resonance occurs. The oscillator is calibrated so that its frequency is known directly. Accurate frequency measurements are obtained by recording the blade frequency simultaneously with that of a known source (1000-cycle tuning fork or 60-cycle network) on an oscillograph film. A magnetic pick-up coil is used to transmit the vibrations to the oscillograph. In Fig. 4 this pick-up coil is shown being held against the uppermost blade of a segment of which the bottom blade is being vibrated.

For tests of *mechanical strength* the vibrator is used exclusively. These tests are carried out as pure fatigue tests; the structure is vibrated at its natural frequency with constant amplitude and the number of cycles necessary to produce failure is recorded. A large number of cycles is reached in relatively short time (it takes 14 hours to reach 10 million cycles for a frequency of 200 cycles sec.).

The amplitude is measured by microscope (Fig. 1) or, when it is very large, by scale. The method of watching a bright point on the vibrating object through the microscope is well-known. Another scheme is represented in Fig. 5: the microscope is focused on the edge of the object. Standing still, this edge is made to coincide with the 0 mark on the microscope scale. Light is put back of the object, so that this appears as silhouette. When vibrating, the dark edge seems to have moved on one side of the 0 mark, and a dim line can be observed on the other side. The amplitude is read conveniently on the scale.

The study of *damping* is still in its infancy. One of the easiest ways to determine the overall damping is to measure how rapidly the free vibration dies out (Fig. 6). The logarithmic decrement δ, taken as the natural logarithm of the ratio of two succeeding amplitudes is used as measure for damping. Since the ratio between consecutive amplitudes cannot be determined accurately we take a number of cycles. We have then

$$\delta = \ln \frac{a_0}{a_1} = \ln \frac{a_1}{a_2} = \ldots = \ln \frac{a_{n-1}}{a_n}$$

or: $a_0/a_1 = a_1/a_2 \ldots = a_{n-1}/a_n = e^{\delta}$. Then $a_0/a_2 = a_0/a_1 \times a_1/a_2 = e^{\delta} \times e^{\delta} = e^{2\delta}$ and $a_0/a_n = e^{n\delta}$

Hence $\delta = \frac{1}{n} \ln \frac{a_0}{a_n}$,

the formula used to determine the average decrement.

To study the actual *vibration of rotating blades and bladed disks* an optical method was developed lately. Fig. 7 shows the experimental set-up. Light from an arc lamp is reflected and sent into the hollow spindle which

(Continued on page 15[illegible])

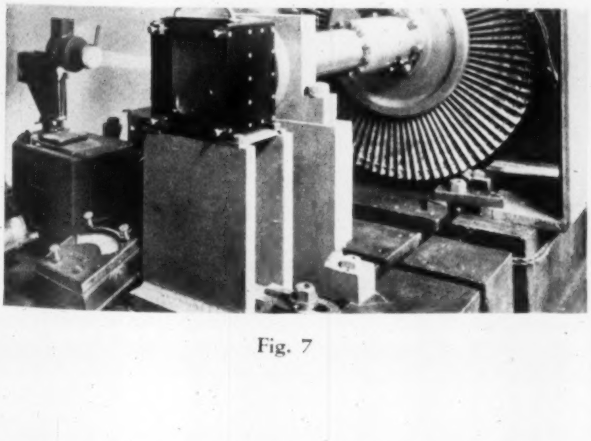

Fig. 7

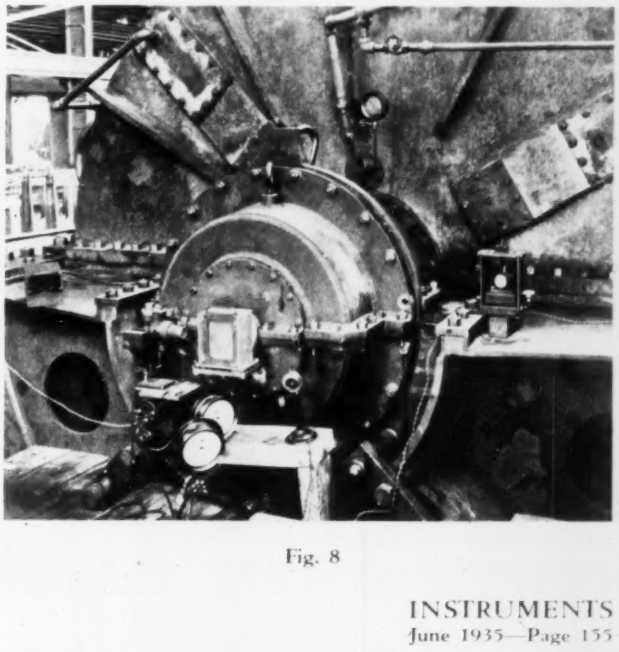

Fig. 8

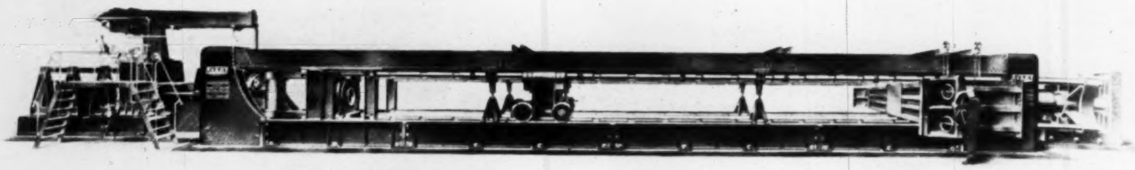

Fig. 41. Avery Testing Machine of 2,800,000 lbs. Capacity Installed in 1926 at the Brittania Works of Dorman, Long & Co., Ltd. Middleborough. (Courtesy W. & T. Avery, Ltd.)

Materials Testing Machines

An Account of Their Development, with Special Reference to the Tension-Compression-Transverse Group

By C. H. GIBBONS*

PART EIGHT

This machine was destined, however, shortly to be overshadowed by the great 2,800,000-lb. horizontal Avery installed late in 1926 at the Brittania Works of Dorman, Long and Co., Ltd., Middleborough. (Fig. 41) This machine, contrary to the Riehle, uses a hydraulic cylinder for load producing purposes, but uses the lever-and-poise system of load measurement. It accepts specimens in tension up to 50 feet long and 6″ in diameter or 3″ × 12″ rectangular and compression specimens up to 50 feet long and 45″ square. It is also arranged for transverse testing on 20-foot centers of all beams up to 45″ wide and as much as 50 feet in depth. The sides of the building housing the machine have doors so located that by constructing a special girder and inserting it in the machine, tests on spans of any length are possible.

In order that the great load be distributed over a sufficient length of knife edge,[78] there are four great levers of the first class operating in parallel and connected on one side to the specimen and on the other to a great crank which changes the direction of the forces from horizontal to vertical. The load is then weighed on a lever with a poise whose weight is one ton (2,240 lbs.). Knife edge loads are kept to approximately 5 tons (11,200 lbs.) per linear inch, which means that each knife edge of the four great levers is 62″ in length. The first lever ratio is 6 to 1 and the second is 5 to 1. Since the overall ratio is 1,250 to 1, the remainder is secured in the ratio of the arms of the weighing lever itself. The load producing ram is 32″ in diameter with 66″ stroke and has a 20″ diameter pullback cylinder and ram inside the 32″ main ram and pulls axial with it. Liquid under a pressure of a maximum of about 3,500 lbs./in.^{2} is supplied by a system of hydraulic pumps and accumulators.

The third of the machines of the last decade is the 4,000,000-lb. Southwark-Emery Universal, installed May, 1932, in the new laboratory of the University of California, Berkeley, California. However, before describing this machine specifically it is fitting that something be said of the development of the ideas and design incorporated in the Southwark-Emery Testing Machine.

The principle involved in the weighing of the load has been traced through Desgoffe and Oliver, Thomasset, Maillard, and A. H. Emery. The Emery application has never been equalled for sensitivity and accuracy, but the A. H. Emery machines always subordinated convenience in manipulation for the utmost in accuracy and sensitivity. It was postulated by the Southwark-Emery group that some degree of these undoubtedly necessary features might be traded for greater convenience in manipulation, retaining the while an accuracy well within the degree of uniformity of the usual material tested and a sensitivity equal to the ordinary demand of the research laboratory. At the same time, the economics of the situation dictated that these features should be supplied at a price which would make the new machine truly competitive with contemporary testing machines.

In fine, however, the combination of the Emery hydraulic support, with its frictionless and practically inertialess weighing system with an indicating instrument having at its core the perfected Bourdon tube, is the Southwark-Emery Testing Machine. Choice of steel and

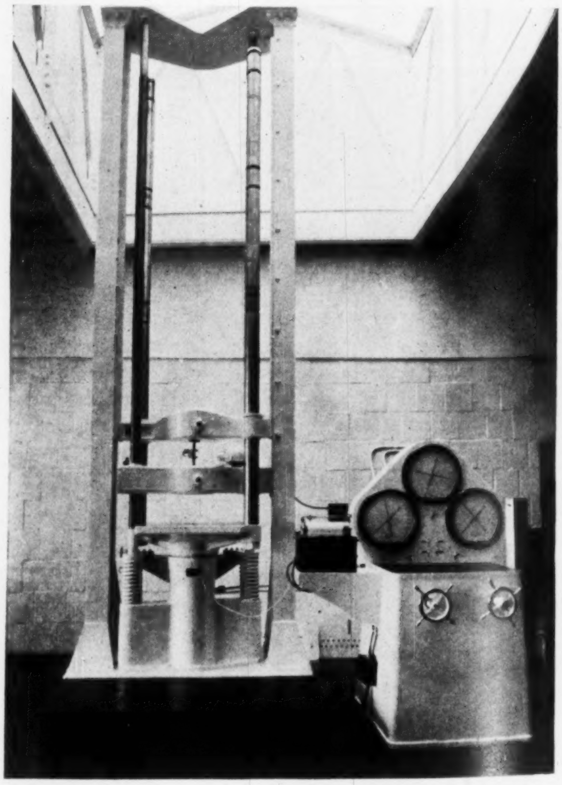

Fig. 42. A Recent Installation of a Southwark-Emery High Column Universal Testing Machine with Southwark Stress-Strain Recorder. (Courtesy of U. S. Navy)

heat treatment, after careful and laborious research, has given linear characteristics of pressure against deflection of Bourdon tube over a wider range than ever before thought possible. This, with certain structural improvements in the hydraulic support, has made possible the Southwark-Emery Testing Machine, one of the most recent of which is shown in Fig. 42. One of the not unimportant features of the Southwark-Emery system is that increasing size presents no great problem beyond purely structural ones. For example, there is no problem corresponding to that of the lever-and-poise machine designer in securing length of knife edge. The weighing system between the hydraulic support and indicating mechanism is merely a thick-walled copper tube. It weighs a small fraction of the weight of a mechanical weighing system, and is much less costly. Beyond the problems of dissipation of recoil energy—which is common to all types of testing machines—there is no reason why testing machines of any capacity which engineering technique may demand may not be built within the principles of this system.

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*Baldwin Southwark Corp., Philadelphia, Pa.

[78] Knife Edges—Materials of and Stresses in, H. L. Van Keuren, *Railway Age Gazette*, Vol. 63, July 20, 1917, page 112.

The 4,000,000-lb. Southwark-Emery at the University of California (Fig. 43) is the largest precision testing machine in the world in two respects. One of these is loading capacity, and the other is size of specimen accepted. This machine exerts 4,000,000 lbs. in compression, 3,000,000 lbs. in tension, and tests in transverse up to 3,000,000 lbs. on 11-foot centers and up to 400,000 lbs. on any centers beyond the 11-foot dimension. The clear space between the 12″ diameter vanadium steel tension members is 120″. An ordinary truck may be driven between them and the machine itself lift the specimen. The table, being fixed, is located at floor level. Compression specimens up to just under 10 feet square and 33′ 6″ in length may be tested to 4,000,000 lbs. Tension specimens up to 33′ 6″ diminished by the machine stroke may be tested.

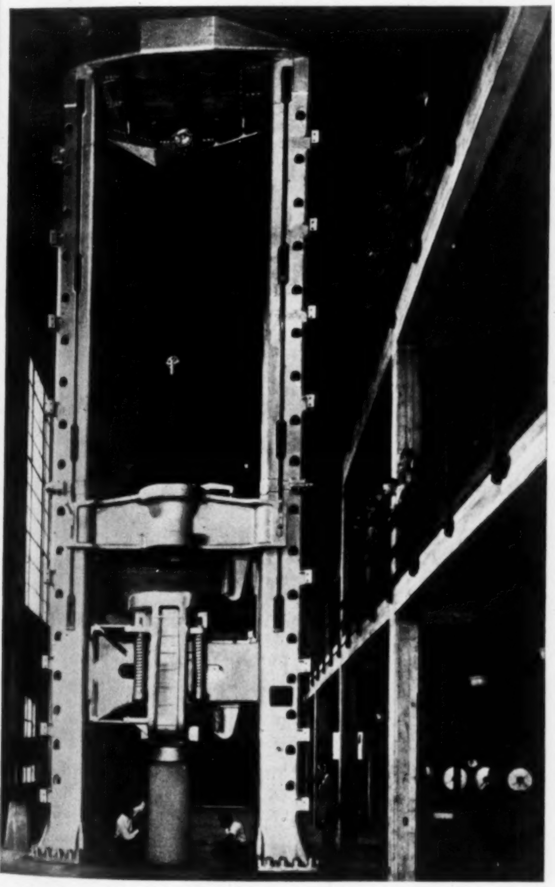

Fig. 43. The 4,000,000-lb. Southwark-Emery Testing Machine at the University of California. (Courtesy of University of California)

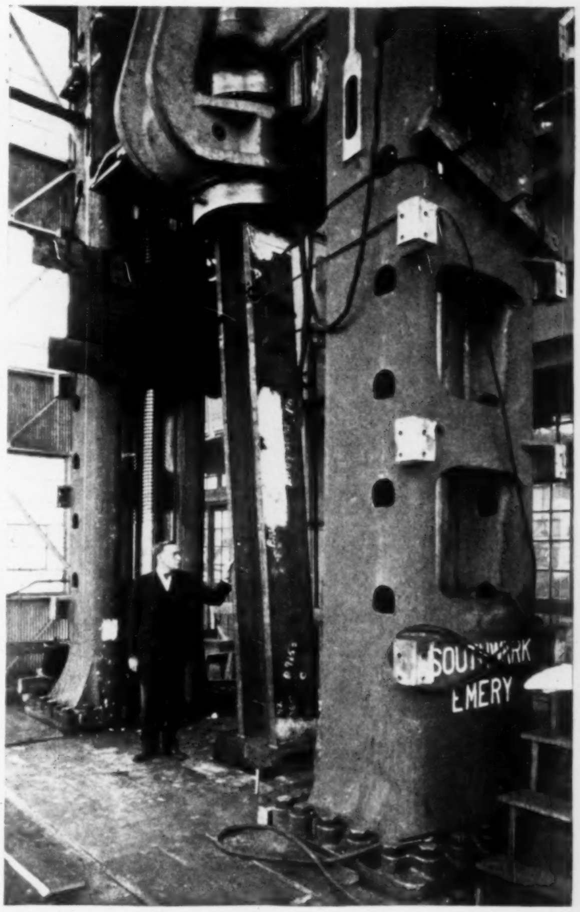

Fig. 44. The Test for Structural Stability of a 4,000,000-lb. Southwark-Emery Testing Machine.

There has always been a very natural question in the minds of testing machine designers and users as to the structural stability of two screw testing machines to the side loads imposed by buckling columns in compression testing. In order to secure data on this subject under controlled conditions an H column was prepared and tested as shown in Fig. 44. This was so sloped as to put on the machine at 2,000,000 lbs. load a moment at floor level of 2,000,000 ft-lbs. This load was held while measurements of deflection of the structure were made and while data were collected as to the elastic curve assumed by the column and the tension screws of the machine. These were found to be quite nominal and close to those found by ordinary elastic theory.

During the period, roughly, 1930 to 1933, four testing machines (of three general types) by four manufacturers have been developed. As noted earlier a testing machine to be modern must have a dial indicator. Each of these four has such an indicator. In other details, however, they vary widely. They will be treated separately and at sufficient length to afford a clear picture of the basic principles of each. Since in chronology they were nearly one we will place them in alphabetical order as to manufacturer's name.

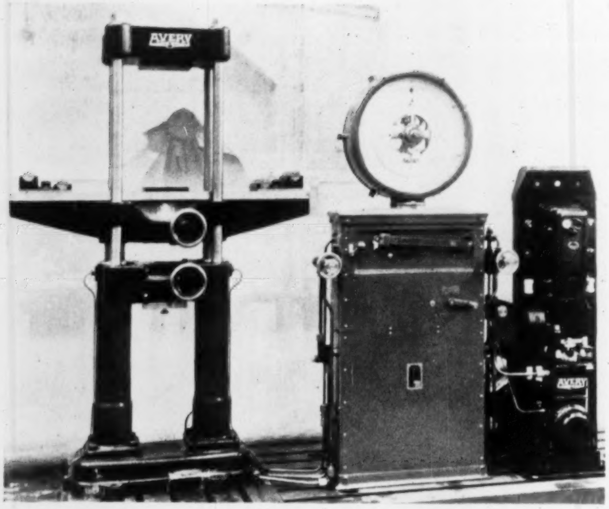

Fig. 45. Vertical Universal Testing Machine Built by W. & T. Avery, Ltd., of Birmingham, England. (Courtesy W. & T. Avery, Ltd.)

In England, W. & T. Avery, Ltd., Birmingham (mentioned previously as the builders of the 2,800,000-lb. horizontal at Middleborough, Eng.) introduced a vertical universal testing machine (Fig. 45) having hydraulic means of load production and of strain compensation and having a hydro-mechanical weighing and indicating system. The loading cylinders and rams (of which there are two) are lapped and ground so that no packing is required. These cylinders are stationary and not rotated. Communicating with the main cylinders is a small cylinder of greatly reduced area having a ram continuously rotated during test to reduce the friction between cylinder wall and ram. A system of levers (with one or more weights) resist the longitudinal motion of the ram under its load. Connected to this lever system is the spindle of the indicating hand before a graduated dial. A simple change in lever ratio makes two ranges available.

In essentials this machine is that of Amsler as built since 1904. A feature, however, is a built-in recorder which draws a stress-strain graph on a plane surface, as is also a jointed indicating hand—the latter in order that it many pass, uninjured, electrical contacts used in load maintenance.

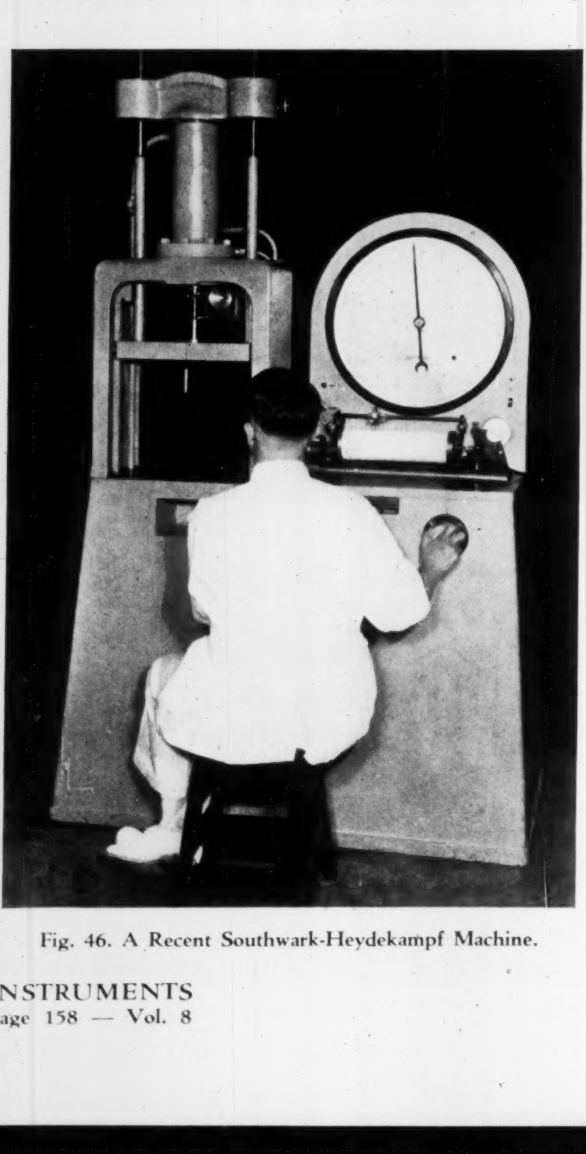

Fig. 46. A Recent Southwark-Heydekampf Machine.

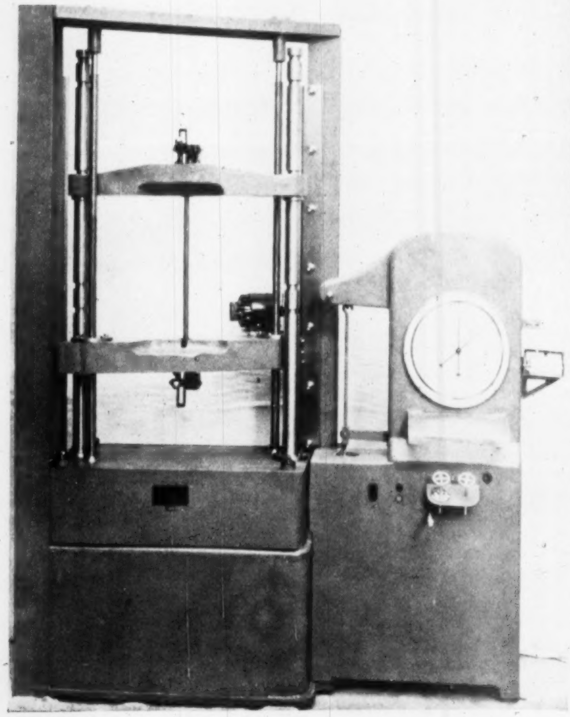

Fig. 47. A Recent Olsen Vertical Testing Machine.

The second of this group of four is the Southwark-Heydekampf testing machine introduced by Baldwin-Southwark Corp., Philadelphia (Fig. 46). This type has hydraulic means of load production and of strain compensation in a cylinder having a rotating body or sleeve. Load is measured by means of an auxiliary cylinder of reduced area (with rotating sleeve), the load on the ram of which is reacted by a pair of specially designed and constructed springs of great accuracy and sensitivity, of a practical zero temperature co-efficient, of negligible hysteresis, creep and time-strain effects. The extension of these springs actuates the indicating hand before the dial face.

One of the conveniences of this type of testing machine is the opportunity of range extension by change of springs. In addition, by means of an electrical device—automatic in operation—ranges may be changed in the ratio of 5 to 1 without change of spring. The indicating dial face is double, the front being graduated (but not marked with figures) and perforated. The rear carries the range figures and may be moved to its appropriate position by means of a slot and hole quite similar to that employed on the dial telephone. An arrow indicates through an opening in the front face: (a) range, (b) pounds per graduation, and (c) spring number.

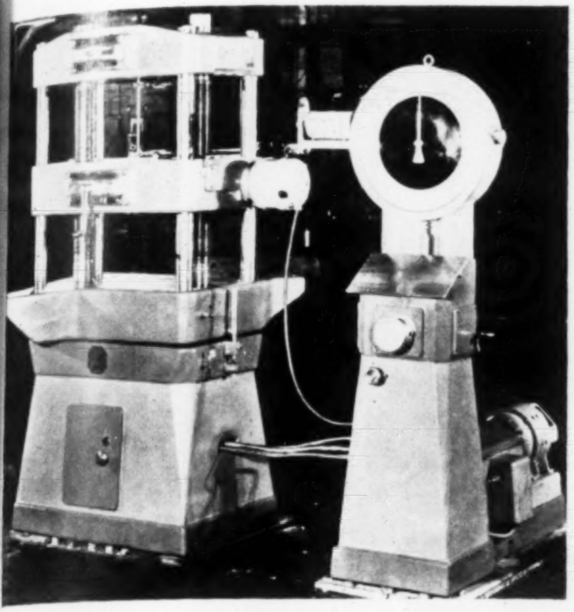

Fig. 48. A Testing Machine Built Within Recent Years by Riehle Bros. (Courtesy Riehle Testing Machine Division, American Machine and Metals, Inc.)

The unique feature of this machine is, of course, the use of springs as load reactors. This had never been done on machines having a guaranteed deviation from absolute accuracy so small as ½ of 1%. This type of machine is now offered in sizes up to 200,000 lbs. capacity.

The third is that introduced by Tinius Olsen Testing Machine Co., Philadelphia (Fig. 47). This type employs either a mechanical or a hydraulic[79] load producing and strain compensating system with a lever system to decrease load values and increase movements and with a weighted pendulum (or a lever system) as a final load reactor. Attached to this pendulum are the devices which cause an indicating hand to rotate before an indicating dial, two revolutions being made for each full range. Several ranges may be had by changes of weights and of positions of same on the pendulum. A recorder is usually built-in, the load moving the recorder pen horizontally and the strain—by any of several devices—causing rotation of the recorder drum.

The fourth is that of Riehle Testing Machine Division, American Machine and Metals, Inc., Philadelphia. This machine (Fig. 48) has a hydraulic cylinder and ram (neither of which rotates) with lapped and ground surfaces and without packing for load production and for strain compensation. Communicating with this cylinder is a cylinder of less area, having a rotating ram so arranged as to areas as to offer, by the simple turn of a lever, two ranges. The load resistance in the weighing and indicating system is furnished by a steel float in a mercury bath. The depression of the float becomes, then, a measure of the load on the specimen and the float is attached to the spindle of the indicating dial in such a way as to read specimen loads directly.

---

[79] The hydraulic cylinder is inverted, the ram moving downwards to produce load. It is, therefore, necessary to provide means of return of the ram to initial position either by a double-acting main ram or by an auxiliary ram and cylinder opposed to the main ram.

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MECHANICAL TESTS ON TURBINE BLADES

Continued from page 155

carries a bladed disk. A flat mirror, mounted in the center of the spindle not far from the disk, projects the beam towards the blade tips, where it hits a tiny curved metal mirror, attached to a blade. This little mirror sends the light back again into the spindle. The returning beam is focused on a glass screen (or film) in a camera (note light point on photograph). The light point is eccentric with respect to the spindle axis, so that when the disk rotates it describes a circle on the screen. When the blades vibrate, the little mirror at the blade tip deflects the light beam going towards the camera, thus producing an oscillating motion of the light point on the screen. When rotating, this motion is superimposed upon the circular motion and the result is a wavy circle. The frequency is found at once as product of disk speed and number of peaks on the circle.

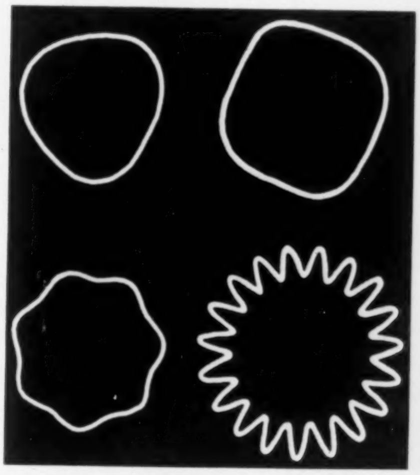

Fig. 9

In the experimental set-up the four lowest modes of vibration of the blade group could be produced by letting the blades pass by a d.-c. electromagnet. Each mode was excited at a number of speeds (whenever the frequency was a multiple of the running speed) and the observer can see some forty distinct vibration pictures between 800 and 2000 r.p.m.

The same method was used successfully to study the vibration of very large disks, where the centrifugal force had considerable effect on the frequencies. Fig. 8 gives an outside view of the set-up (notice camera near bearing). The disk tested then is shown in Fig. 4. Some of the records are shown in Fig. 9.

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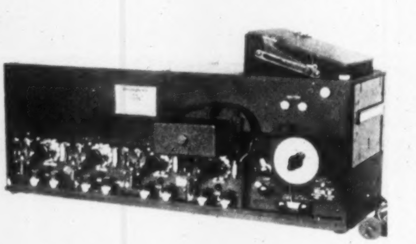
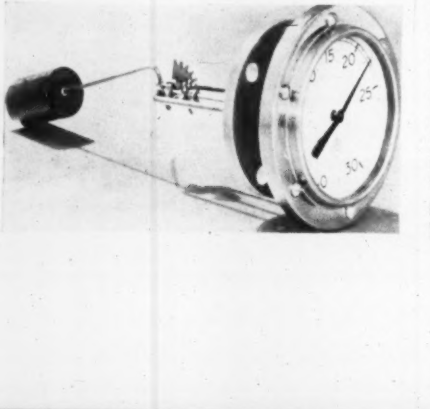
Universal Oscillograph

A new oscillograph, "Type PA," interchangeable control panels for various field, industrial and laboratory investigations, and a wide selection of galvanometers for producing up to eight records, are announced by the Westinghouse Elec. & Mfg. Co. Features: (1) phenomena can be viewed while photographing; (2) daylight loading holder—5, 10, or 200 ft. of 5" wide film or paper—so arranged that exposed portion can be cut off without disturbing supply; (3) wide range of film speed by variable-speed motor; (4) interchangeable galvanometers and vibrators; (5) automatic type ½ cycle starting time. The complete oscillograph with controls exclusive of film-holder measures 25" long × 8½" wide × 9½" high and weighs approx. 50 lbs. It can be supplied initially with only the controls and galvanometers that are necessary for a particular requirement and then as the requirements change and grow, other controls and galvanometers can be installed. The industrial and laboratory types are supplied for either 6 volts d.c. or 110 volts a.c. or d.c. Under automatic operation such as for fault recording on power systems, the starting time is 1/120 second (magnetic clutch and a continuously running motor). A floating arm in a loop of film makes it possible to use film or paper 200 ft. in length and still obtain this high starting time.



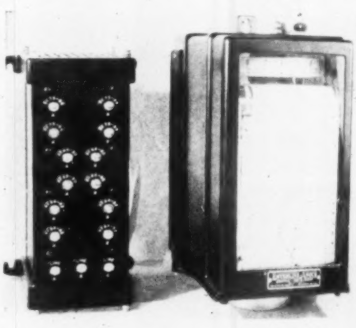
Magnetic Tank Gage

"Model 4 MGFR" magnetic liquid level indicator is announced by the Rochester Mfg. Co. for mounting on top, at the side or at the bottom of the container to be gaged. Employment of the magnetic-coupling principle permits absolutely leakproof construction: breaking the glass exposes only the dial compartment which remains sealed off from the rotary magnet. All parts are of brass, except the glass, the magnet coupling and the cork float. Bezel ring is chromium plated.



Recording Kva Meter

Esterline-Angus announce a new kilo-volt-ampere recording instrument, designed for use in making a continuous record of electrical energy. The new instrument embodies the makers' standard Model A.W. wattmeter and phase-shifting network which supplies it with a lagging potential corresponding to the average power factor of the circuit. By means of three sets of taps, the instrument is made to cover a range of power factor from 0.54 to 0.94, with an error not to exceed 1.5%. A tap on the phasing network permits measurement of reactive volt-amperes with the same instrument. By omitting the network, the instrument can be used as a recording wattmeter.



The network can be furnished separately. It is supplied in a combination 100-200 volt range, potential transformers being employed for higher voltages. This new instrument is said to have unusual flexibility in application, and to make possible kva measurements with higher accuracy than could be obtained on previous equipment. It can be supplied in a wide variety of ranges and with ten different chart speeds. Charts are uniformly divided and are 94 feet long. *Types:* flush, front-of-board, wall and portable.

Color Indexed Valves

Molded of colored plastic materials, a new type of valve wheel developed by Jenkins Bros. makes it possible to identify valves for steam, water, air, etc. by distinctive colors. Valve wheels are offered in five standard colors—blue, red, black, green and gray—unmarked and with five standard service markings molded in relief. Wheels can be made up in other color or with special markings. Jenkins Colored Wheels are said to be strong, cool to the touch, easy to grasp, sanitary, permanent in color and pleasing in appearance.

Polyphase Wattmeter

Roller-Smith Co. announces a new 4" polyphase wattmeter, "Type FA," which helps to round out their line of 4" a.c. and d.c. instruments. The new instrument is made in the semi-flush model: body diameter 4⅛" and over-all diameter 4¾", projecting beyond the front of the panel 1¾", the same depth as the corresponding a.c. and d.c. ammeters, voltmeters, etc. The movement is a full two-element polyphase element. All instruments are rated at 5 amps. and are furnished for potentials up to 600 volts. The scale is about 2¾" long; indications are well damped; accuracy is said to be surprisingly high for such a small instrument. The instrument is recommended by the makers for small switchboards and panels where instruments must combine accuracy with small dimensions.

Sand Testing Instruments

In addition to the four sand-testing instruments illustrated and described in our March 1935 issue, page 84, the Harry W. Dietert Co. announces two more: *Moisture Determination*: in percent of dry weight, is obtained by means of the new "Moisture Teller," Fig. 1, which dries a 50-gram sand sample at 212°F. in 45 seconds, the sample being weighed before and after. A motor-driven blower forces air over an electric heating element and through the sand sample contained in a pan with a Monel metal filter cloth bottom. Three pans being furnished, unit dries one sample while operator prepares and weighs others. "Moisture Teller" weighs 8½ lbs., consumes 5 amps., may be used also for clays, coal dust, refractory mixtures, etc.

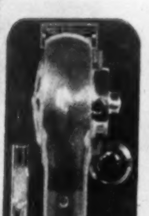


Fig. 1

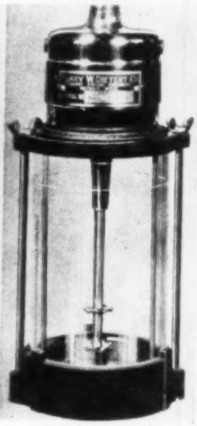
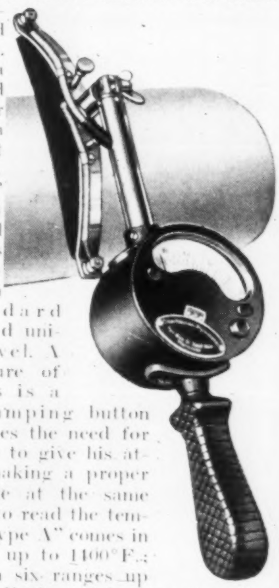


Fig. 2

Percentage of Clay is obtained by means of the new "Rapid Sand Washer," Fig. 2, which is used to scrub the clay bond free from the sand grains of a molding sand. After the sand is treated for 5 minutes in this device the motor is lifted from the wash bottle and the suspended clay bond is syphoned off, leaving the sand grains in the bottom cup of the wash bottle. The cup is then placed in an oven to dry the sand grains, after which they are weighed. Percentage of clay is calculated from the reduction of weight. Overall height is 12"; weight is 10 lbs., motor is 110 volts, 1/30 h.p.

Surface Pyrometers

The Pyrometer Instrument Co. announces a new line of portable surface pyrometers comprising two models: "Type A" for flat surfaces consists of a handled millivoltmeter connected by a 3-ft. cable to a handled rod (17", 23" or longer) with the couple at its offset tip. "Type B" (illustrated) for curved surfaces is self-contained, with five standard lengths and universal swivel. A useful feature of both types is a pointer-clamping button which obviates the need for the operator to give his attention to making a proper contact while at the same time trying to read the temperature. "Type A" comes in four ranges, up to 1400°F.; "Type B" in six ranges up to 1200°F. Each weighs 2¾ lbs. The makers state that these instruments embody "advanced and unique features and improvements," are "extremely rugged in construction" and have a "sensitive galvanometer system with an unusually heavy permanent magnet."



Enamelists' Viscometer

The O. Hommel Co. has designed an apparatus for determining both the specific gravity and the viscosity of porcelain enamel slips. It consists of a brass pipette which at the narrow end is fitted with a standard thread for nozzles of various sizes, depending on the viscosity of the enamel to be measured. The same pipette with a different nozzle is therefore suitable for ground coats, as well as cover coats. The open end of the pipette is fitted with a cap for gravitometry: in this case the pipette is dipped in the tank of enamel, excess enamel is washed off, the pipette is wiped dry and weighed. The net weight gives a direct indication of the specific gravity of the milled slip. When this has been done, the finger is placed on the tip, the cap is removed, and the time necessary to drain gives a direct indication of the viscosity. With the aid of this pipette it is possible to reproduce the enamel used in dipping either ground coat or cover coat.

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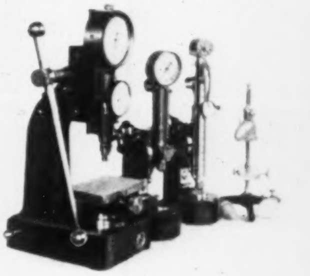

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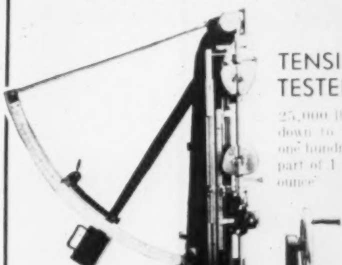

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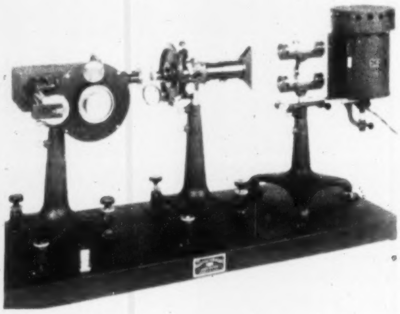


The *photometric element* employed is a modified Martens Polarizing Photometer, said to be extremely sensitive and accurate. This unit having many applications, two styles are offered: The L486-S Compact Martens Photometer, essentially of standard form, has a circle divided from 0 to 360°. The L486-L Research Martens Photometer, recommended for use in spectrophotometric assemblies, is larger and has an added direct-reading density scale. The fields of both photometers have an angular magnitude of about 5° and are of the standard two-part type with a horizontal dividing line, which disappears completely when the fields are matched. The biprism is cemented to the Wollaston. The astigmatism of the Glan-Thompson prism is compensated in the lens system. Equal intensity of the two comparison beams for absorption measurements is assured by combining a pair of collimating rhombs with a suitable lens. Beam separation being accomplished by two total reflections, no polarization is introduced. The optical centers of the exit faces of the rhombs are 71mm. apart.

The *Collimating Rhombs* with attached lens for absorption measurements and holders for absorption tubes are all mounted on one leveling tripod base, to which can quickly be screwed the Incandescent Light Source, which can be replaced by the Illuminating Sphere. When this sphere is used for reflection measurement the collimating rhombs are replaced by supplied condensing lenses.

A *Rapid Setting Wavelength Spectrometer* is used in conjunction with an exit slit as a monochromator, the Maxwell-Ives method of spectrophotometry being used. The dispersing prism is the Pellin & Broca constant deviation type with prism faces [illegible] high and an entrance face 47mm. wide. All optical and delicate mechanical parts are fully enclosed. The Exit Slit for the Rapid Setting Wavelength Spectrometer is bilateral in form and provided with jaws 10mm. long. A graduated scale on the face of the knurled setting collar allows setting and reading of the slit widths to 0.01mm.

The *Illuminating Light Source* with 500-watt projection lamp has a [illegible] ventilated housing containing a chromium plated cylindrical reflector. Interchangeable screens of opal and ground glass are included.

The *Illuminating Sphere* is [illegible] diameter. Its reflecting walls are of white porcelain enameled steel. The combination of 16 concentrated filament lamps arranged on an equatorial ring and a specially designed diffusing screen (near each lamp for shielding specimens from direct illumination without casting shadows), provides a light of an exceptionally uniform diffusion and intensity.

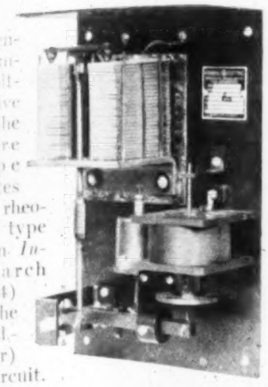
There are available oculars and camera attachments for spectroscopy with the spectrometer, filters for colorimetry with the photometer, special backs for opacity measurements on paper, etc., with the help of the illuminating sphere and photometer, and other accessories.

Diffraction Analysis Apparatus

A new pinhole instrument for high speed high-voltage X-ray diffraction analysis is announced by St. John X-Ray Service, Inc. This quick and convenient method of diffraction analysis, developed by Dr. Ancel St. John in 1927, was described in *Transactions A.S.S.T.*, Vol. 13,

March 1928, pages 485-492. It is a modification of the usual pinhole method using tungsten radiation at 200 kv. or more as in radiographing castings, so that a powerful beam of X-rays passes through 1/8" of steel, for instance. If desired, entire sheets or formed articles can be mounted in the instruments, or specimens can be cut without affecting the portion to be examined. Exposures of two hours or less are sufficient. The method has been applied to brass, tin, steel and other metals and their alloys in the study of mechanical working, heat treatment, extrusion, aging, the effect of exposure to gases, and the like, to determine internal strain, and so on. One or more of the new pinhole instruments can be mounted on existing radiographic X-ray equipment and may be used simultaneously while inspecting castings or welded pressure vessels.

Voltage Regulator



Type G4 automatic generator-voltage adjuster has been developed by the General Electric Co. for use with small a-c generators, synchronous motors, synchronous condensers, and d-c. generators. It embodies a voltage-sensitive element of the movable-core solenoid type which operates a wide-range rheostat (of the type described in *Instruments*, March 1935, page 84) connected in the exciter (or d-c generator) shunt field circuit. The solenoid is excited through a fixed resistor from the generator armature potential. An air dash-pot provides antihunting action. The action is such that there are no noticeable steps as the resistance changes. The G4 Voltage Adjuster is normally at rest and operates only when a change in excitation is required. Setting for a given generator voltage is accomplished by means of a sliding weight on the main operating lever between the solenoid core and the main shaft.

Visual Gage

The new No. 1 Visual Gage (Fig. 1) produced by the Sheffield Gage Corp., is both a rapid inspection gage for close-tolerance production work and also a precision-comparator by which fine work shop gages may be periodically checked. A relative movement of 0.000025" between the anvils covers one 1/8" unit on the illuminated dial. This 5000 to 1 magnification results from mechanical and optical means without resorting to elements such as gears, pinions, levers or knife edges. No element in the gage head is subject to sliding friction; it is said that there is no opportunity for the gage to lose adjustment or become inaccurate due to wear. The heart of this gage is a patented reed mechanism. It consists of 4 flat reeds so arranged that when a part is inserted between the anvils, one set of reeds is put in compression and the other set in tension. The movement resulting from the equalization of these stresses causes the pointer to move across the reading scale. The upper gaging element is diamond tipped; the lower anvil comes in two interchangeable types, one flat for flat surfaces and outside cylindrical diameters; the other, of a mandrel type, for gaging internal diameters. When the gage is to be used for high production inspection as, for instance, on bearing rollers, piston pins, refrigerator parts, etc., a strip of tungsten carbide 1/2" wide is set in the flat surface of the anvil as an additional protection against wear. The mandrel anvil for internal diameter gaging carries two strips of tungsten carbide properly spaced. These are set solidly in the mandrel with their surfaces slightly above its outside circumference. A lower contact consisting of a spherical tungsten carbide point is set in the end of a lever which actuates the diamond pointed upper gaging element. Thus all internal diameters are measured on a 3-point contact. The visual gage can be used on any 110-volt a.c. 60-cycle supply.

The No. 3 Sheffield Visual Gage (Fig. 2) differs from the No. 1 in that it operates on a 1000 to 1 magnification. Except for this difference in sensitivity, it is essentially the same. Both, it is said, can be handled with the same speed and convenience.

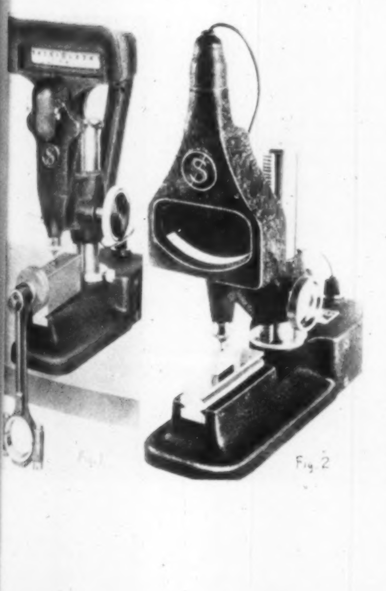
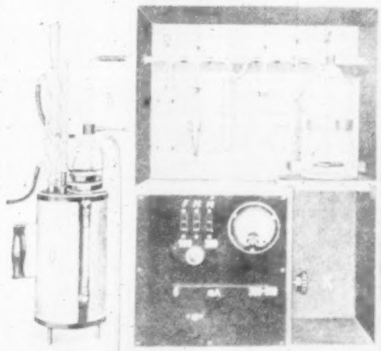


Fig. 1

Fig. 2

Oil Ageing Tester

Mineral and vegetable oils, varnishes, paints and lacquers, shellac, enamels, resins, and many other organic materials, usually deteriorate by oxidation. In the case of transformer and lubricating oils, insulating varnishes, printing inks, etc., this progressive oxidation, sometimes called "ageing," is an important factor. The "Oxydator," announced by Herman A. Holz, makes it possible to determine in advance, the "age limit" of such materials, by exposing them directly to the influence of oxygen. This new apparatus produces the ageing effect on oils and other materials, by applying oxygen under standardized conditions. It measures the quantity of oxygen which a material absorbs during a definite period.



The liquid to be tested is poured on a calibrated catalyzer and is exposed to the action of oxygen, at 100°C. The oxygen is produced in the apparatus itself, in the same quantity as absorbed by the material under test. The electric current required to produce this quantity of oxygen is measured, and the data thus obtained are said to represent an exact measure of the "oxidability" of the material investigated. The test period required for a complete ageing curve is 100 minutes. For simple control analyses, 30 minutes are sufficient. The quantity of oil required for one test is 15.5 grams.

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MANUFACTURERS' NEW LITERATURE

In this department we list each month the printed matter issued by manufacturers. Unless otherwise noted, any of the items listed may be secured free upon application to the issuing firm. Manufacturers who have not yet sent in their printed matter are invited to do so.

C144 **Instant Current Measurements.** 6 page bulletin illustrates the various types of Crompton "Tong Test" Ammeter for measuring currents up to 2300 volts. Columbia Electric Mfg. Co., 1519 Hamilton Ave., Cleveland, Ohio

C145 **"Fulscope" Temperature Controllers.** Catalog 56R, 40 pages, gives detailed information on these controllers for temperature and combined temperature and pressure in following types: recording, indicating, time-schedule and other special purpose types. Taylor Instrument Companies, Rochester, N. Y.

C146 **Unit Combustion Control.** Bulletin F-172-T, 4 pages, illustrates schematically the Metermax unit combustion control for boiler furnaces. Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia, Pa.

C147 **Volume Indicator for Radio Telephone Broadcasting Systems.** Bulletin No. 700A gives engineering data on this equipment. Graybar Electric Co., 420 Lexington Ave., New York, N. Y.

C148 **Paint,** is the name of a new house organ put out by the Sherwin-Williams Co., Cleveland, Ohio. The first issue contains information on color in relation to accident prevention, preparation of metal surfaces for painting, color, heat reflection value of paint colors; light reflective value of paint.

C149 **Automatic Timers.** General Bulletin on the various timers of the Walser Automatic Timer Co., Chrysler Bldg., New York, N. Y.

C150 **Standard Parts.** Circular R-2-E covers: rotary switches, uni-polar and bi-polar switches, button switches, toggle switches, resistors and shunts, binding posts, cable and plug assemblies, grid leaks, fuses, mounting bases, etc. Weston Electrical Instrument Corp., Newark, N. J.

C151 **Rheostats and Resistance Units.** Catalog 11 gives complete data on: power rheostats, fixed resistors and transmitting grid leaks, semi-variable resistors, etc. Ohmite Manufacturing Co., 636 North Albany Ave., Chicago, Ill.

C152 **Plate Current Meter** for radio telephone broadcasting systems is illustrated in Leaflet 1-H-34-5. Graybar Electric Co., 420 Lexington Ave., New York, N. Y.

C153 **Moisture Meter** for lumber and thin veneer is described and illustrated in Bulletin 1028B. The latest model instrument is calibrated by the U. S. Forest Products Laboratory. C. J. Tagliabue Mfg. Co., Park and Nostrand Aves., Brooklyn, N. Y.

C154 **Indicating Wall Type Pyrometer.** Leaflet gives ranges and mounting dimensions on this pyrometer manufactured by the Lewis Engineering Co., 52 Rubber Ave., Naugatuck, Conn.

C155 **Solving Industrial Crimes, Case No. 5.** Brief story shows how graphic wattmeters determined reason for excessive lighting bills. Esterline Angus Co., Indianapolis, Ind.

C156 **Radio Tube Testers.** Bulletin 1935, 10 pages, covers standard analyzer, deluxe analyzer, model 91 analyzer, standard diagnometer, model 85 tube tester, counter display tube tester, model 35 tube tester, Supreme meter and oscillator model 61. Supreme Instruments Corp., Greenwood, Miss.

C157 **Meters for Steam, Liquids and Gas.** The Foxboro Company, Foxboro, Mass., announces publication Bulletin 200, a 48 page bulletin entitled "Meters for Steam—Liquids—Gas." This bulletin covers the complete line of Foxboro Meters for industrial uses. Of particular interest is the description of the new Universal flow meter which was developed to measure steam, water, air, oil, gas, and all kinds of chemical solutions under any industrial conditions. In addition to the sections describing Flow Meters at work, and the types of Meters and their functions, there is a complete section covering the constructional details. This bulletin also contains much valuable information on flow engineering and measurement.

C158 **Electric Meters.** The Roller-Smith Company, 233 Broadway, New York, N. Y., announces two new publications: 1. Catalog No. 48 covering a.c. and d.c.; panel and switchboard type; 3½", 4", 7½" and 9" round pattern and rectangular; horizontal edgewise and illuminated dial ammeters, milli-ammeters, voltmeters, milli-voltmeters, pyrometers, single and polyphase wattmeters, frequency meters, power factor meters and accessories. 2. Supplement 1 to Catalog 8 covering some recent shipments of air and oil breakers and "self-standing" steel panels.

C159 **Wire Cloth and Sieves.** The Newark Wire Cloth Co., 351-365 Verona Ave., Newark, N. J., have issued a 4-page folder which illustrates and gives data on typical weaves and meshes; shows such products as Testing Sieves; End-Shak Testing Sieve Shaker; Metallic Filter Cloth; and Gasketed Metallic Filter Cloth.

C160 **Manometers, Draft Gages, Flowmeters, etc.** The Meriam Company, 1955 W. 112th St., Cleveland, has sent out an informative blueprint postal card campaign. There are 12 of these blueprint postal cards in all. Seven give data on types and uses of manometers, flow meters, draft gages, pulsation absorbers, etc. One card gives a complete conversion table for measuring various elements by the manometer principle.

Paper Testing Instruments

R. Fuess, Inc. announces additions to the line of paper testing instruments developed by Dr. Bekk of the Ullstein Works, Berlin. Fig. 1 shows the new apparatus for determining *Surface Tensile Strength* or "pick" or vertical tearing strength—the property which limits the viscosity or "tenacity" of printing inks. It is based on the principle that the tendency of a paper to tear when it is lifted from the printing form is a function of the force required to remove, at a given angle, a standard strip pasted on a flat surface. One end of the specimen is pasted onto the brass strip holder (at left) by means of shellac and the other end clamped on the circumference of the drum (upper center). The crank (right) is turned, moving the strip holder arm counter-clockwise and tensing the strip until failure. Fig. 2 shows both the new *Scratch Tester* and photographs of the "scratch pictures" produced therein by the felt side and the wise side of a paper sample. Its operation is extremely simple: a sample is rubbed (under standard conditions) against a common microscope slide which is then examined under standard magnification and illumination. This tester not only permits selecting papers which will not injure printing cylinders, but makes it possible to specify the proper side. The special *Microscope and Illuminating Device*, Fig. 4, used in conjunction with the Scratch Tester, magnifies 20 times and can be provided with a measuring scale for examining all classes of paper stock surfaces. Fig. 3 shows the new *Paper Hardness Tester* which employs the same principle as ball testers used in metallurgy, and which permits measuring also the depth of impression under standard impact conditions, and the "reverse tension height"—these, as well as diameter of impression, being made visible by inking the pendulum striker ball. In general, however, it suffices to measure only the diameter of impression. When only the reverse tension height is to be measured, the ball is not inked and any possible error due to the presence of ink is eliminated. The *Measuring Microscope with Scale*, Fig. 5, is used in conjunction with the Hardness Tester but has numerous other uses.

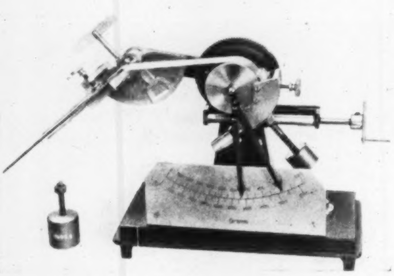


Fig. 1

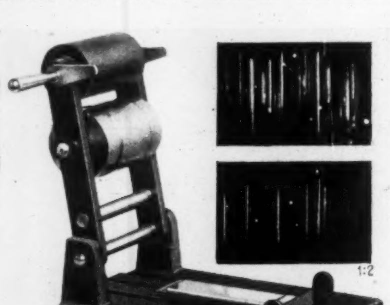


Fig. 2

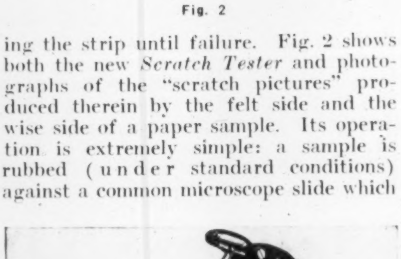


Fig. 3

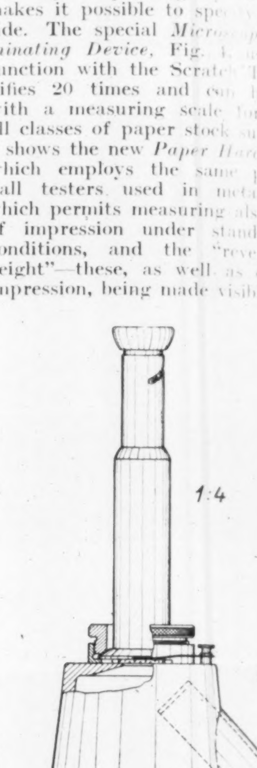
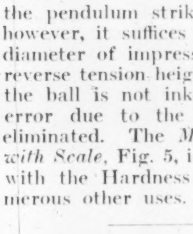


Fig. 4

Fig. 5

"Flocontrol" Valve

The Hancock Valve Div. of Consolidated Ashcroft Hancock Co. announces the "Flocontrol Valve—a combined valve and control instrument." This new device differs outwardly from ordinary valves by a stem-position indicator as illustrated; it also differs inside by a "special slotted seat" giving a straight-line relation between lift and flow. The vertical index is graduated in turns (1 to 5 in larger sizes) and the dial attached to the stem is graduated in tenths of a revolution; making 50 divisions from closed to open, each subdivided into two clicks, thus providing a flow setting scale with 1% divisions. In smaller sizes the stem travel is 3 turns (=60 clicks). The "Flocontrol" valve is available in either globe or angle pattern, in sizes from ⅜" to 2".

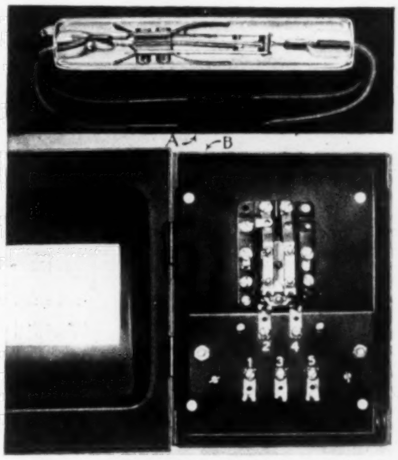


Induction Regulator for Small-capacity Circuits

With a maximum rating of 24 kva the Westinghouse Elec. & Mfg. Co.'s standard line of type S submerged induction regulators has been extended to include units for general industrial use and suburban and rural circuits. In the new "Type SS" regulator no mechanical position indicator, no position indicating signal lights, and no automatic neutral return are provided. An electrical position indicator is supplied instead. Mounted on the control panel, this indicator is not mechanically connected to the regulator mechanism but is rather a measure of its electrical performance and is calibrated to indicate the regulator position at any time that the regulator is excited. By means of a hand "raise" and "lower" switch, the regulator may be conveniently run to the neutral position by watching the position indicator and operating the switch as necessary to bring the regulator to the neutral position. Type SS is equipped with a compensator type of primary relay offering both resistance and reactance—in fixed ratio—the total amount of compensation being readily adjustable to any value within the usual range. On small-capacity feeders a resistance drop twice the reactance drop is a common ratio, the compensation of this device then being within the accuracy of standard line drop compensator at load power factor between 0.70 and 0.95. A desirable feature of this scheme is that on a 3-phase circuit no control wiring is required between regulators, which facilitates mounting single regulators on poles a span apart on 3-phase lines, and makes for economy. Combined losses in the primary relay and compensation circuits do not exceed 5 watts at full load and full compensation. Maintenance is minimal: no lubrication.

Timing Relay

Edison Electrical Controls Div. of Thomas A. Edison, Inc., has designed a new timing relay composed essentially of an Edison Type R-4 Thermal Relay, *A*, which operates a magnetic contactor. The thermal relay, which may be calibrated to operate with a delay of a few seconds or several minutes, is sealed in an evacuated glass tube and is mounted with the magnetic contactor in a standard switch box, the assembly being wired to a readily accessible terminal board *B*. The magnetic contactor is provided with a spare set of contacts so that the unit may be used for sequence closing of two or more circuits. The timing relay is available for use on d.c. as well as a.c. A typical application is starting compressors in sequence in air conditioning: in many installations several compressors are used for across-the-line starters, and allowing 20- to 30-second intervals reduces the demand load and hence the cost of current. In addition to effecting this economy in operating expense, the relay, through the reduction in starting current, may permit the use of existing wiring. The thermal relay is so wired in the circuit that it is cut out as soon as the contactor makes circuit. This allows the heating coil to cool and provide the same timing characteristic within a few minutes. The timing relay also permits the use of a sensitive room thermostat because the delay allows the thermostat contacts to make firmly so that other control equipment will not chatter.



C161 **Gasoline Content of Gas.** A folder issued by the Refinery Supply Co., Tulsa, Okla., describes the Gregory test car column for determining gasoline content of natural gas; gas and gasoline analysis in the field; and operating efficiencies for plants.

C162 **Camera Shutter.** Leaflet gives data on "Compur" shutter, which provides means for regulating exposures ranging from 1 second to 1/200th second. Bausch & Lomb Optical Co., Rochester, N. Y.

C163 **Supersensitive Relays.** Bulletin 1005, 2 pages gives data and wiring diagrams for the midget supersensitive relay and the supersensitive mercury relay. American Instrument Co., Inc., 774 Girard Ave., Washington, D. C.

C164 **Head Phones.** Data sheet No. 10 gives the details on the Type A Piezo-electric head phone. Brush Development Co., Cleveland, Ohio.

C165 **General Radio Experimenter.** The 2 recent issues, April and May, of this periodical contain interesting articles: Using the noise meter with a vibration pickup; a frequency monitor for police and higher frequencies; mica condensers for the laboratory; a large capacitance oil cell; an improved audio oscillator; the analysis of complex sounds of constant pitch. General Radio Co., 30 State St., Cambridge A, Mass.

C166 **General Radio Complete Catalogue.** Catalog H, 190 pages, stiff paper cover, contains complete data on many of their products: industrial devices, resistors, condensers, inductors, frequency and time-measuring devices, oscillators, amplifiers, bridges and accessories, standard signal generators, oscillographs, meters, power supplies, etc. General Radio Co., 30 State St., Cambridge A, Mass.

C167 **Surface Pyrometer.** Bulletin No. 60 illustrates and describes in detail the new "Pyro" surface pyrometer. Pyrometer Instrument Co., 103 Lafayette St., New York, N. Y.

C168 **Calibron Notebook.** The April issue is the first issue of this house organ, which is devoted to a general discussion of the character and scope of the services offered by Calibron Products, Inc., West Orange, N. J. Future issues, which will appear at irregular intervals, will outline the work done on some of the problems submitted to the company.

C169 **Flow Measurement.** 10 page bulletin entitled "Accurate Flow Measurement with the Elgin Isometer" covers in detail the operation of the Isometer, a variable orifice flowmeter. Elgin Softener Corp., Elgin, Ill.

C170 **Audio Frequency Oscillator.** 4-page folder, gives a technical description of the Hickok All Wave Radio and Audio Frequency Oscillator. Hickok Electrical Instrument Co., 10514 Dupont Ave., Cleveland, Ohio.

C171 **Shop Microscope.** Folder D-189 is devoted to the application of a small, portable, battery illuminated shop microscope in the mechanical industries, finishing and electro-plating, textiles and paper, leather, etc. Bausch & Lomb Optical Co., Rochester, N. Y.

C172 **Oxidability of Oils.** Folder describes the Oxydator, an apparatus for the determination of the oxidability of oils (mineral and vegetable), paints, varnishes, lacquers, shellac, printing inks, and other organic materials which deteriorate by oxidation. Herman A. Holz, 167 E. 33rd St., New York, N. Y.

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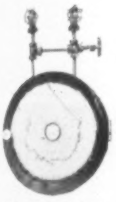
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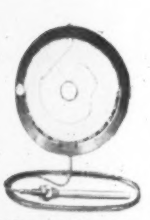
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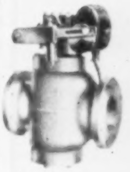
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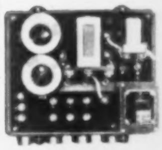
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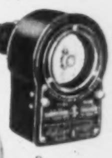
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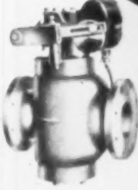
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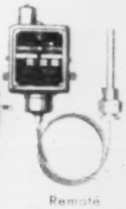
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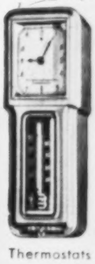
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